Good morning/afternoon Chair Longley and members of the Board. My name is Doug Patteson and I am a Supervising Engineer in your Fresno office. One of my responsibilities is to oversee the Ag and Planning unit that prepared the Draft waste discharge requirements for the Tulare Lake Basin Area.

This is an Informational Item only and the Board will not make a decision on this item today. The Board will hear comments from interested parties and may provide direction to staff regarding future drafts of this Order.

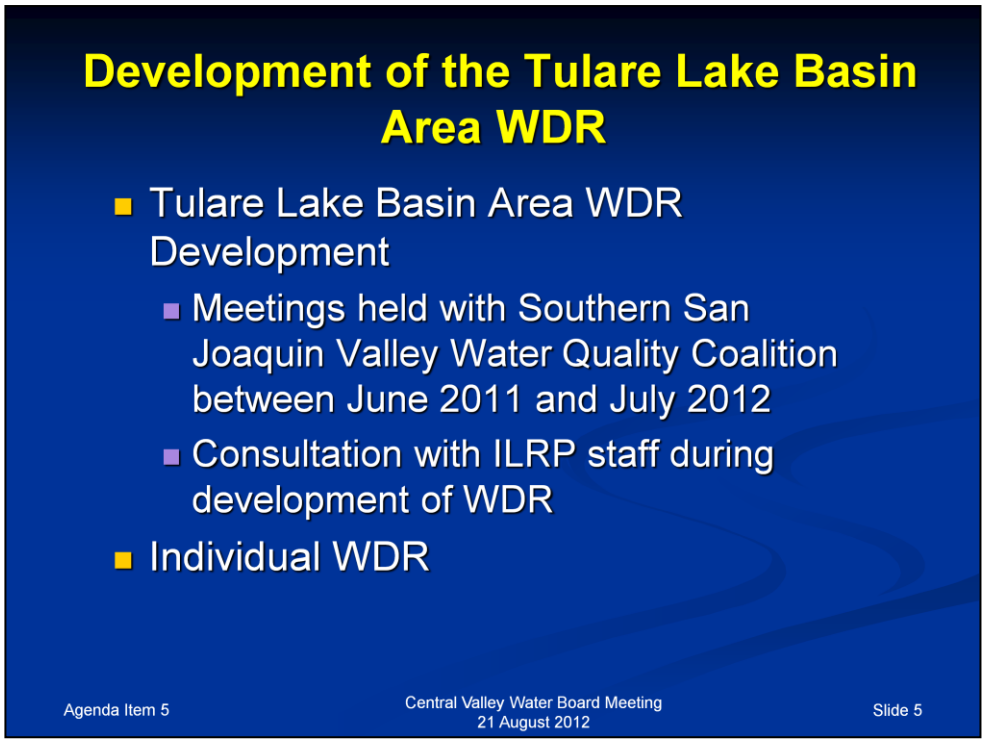
In this presentation, I will provide an abbreviated summary of the Long Term Irrigated Lands Regulatory Program, as most of these matters were presented during the workshop last June for the draft Eastern San Joaquin River Watershed order. Following my introductory comments, Brent Vanderburgh will describe some of the features of the Tulare Lake Basin Area. Brent's part will be followed by a presentation of the Order by David Sholes. I will discuss some of the significant comments we have received so far. And finally, Clay Rodgers will provide a concluding statement. You are free to ask questions as we go, or at the conclusion of the presentation.

Program Background

- Conditional Waiver (2003 & 2006, renewed 2011)
- Monitoring and Reporting Program (2008)
- Draft/Final Program EIR (2010/2011)

Workgroup Processes and Review

- Program Development
  - Stakeholder Input
  - Technical Input - Groundwater Monitoring Advisory Workgroup



Development of the Order for the Tulare Lake Basin Area began over a year ago. Staff met with the Southern San Joaquin Valley Water Quality Coalition between June 2011 and July 2012 before this draft Order was distributed for comment by other interested parties.

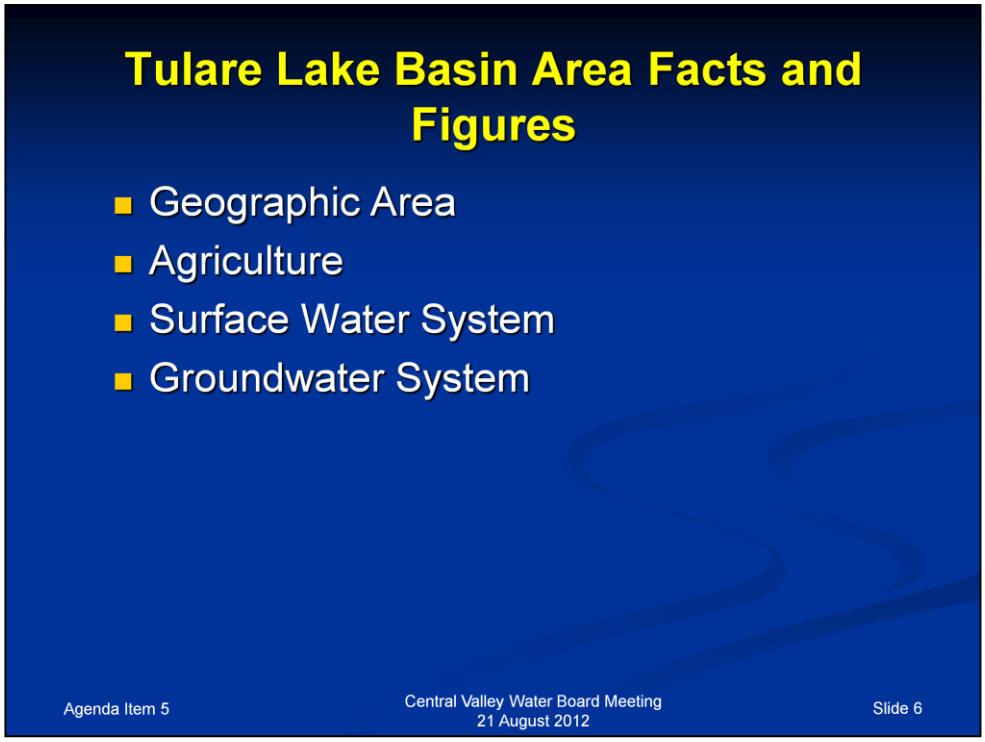
While the Order was being prepared, several other Irrigated Lands Regulatory Program Orders were undergoing similar stakeholder input and development. Many parts of the Orders are similar, such as the process of defining high and low vulnerability areas or the process for developing monitoring plans. This is to ensure a level playing field for growers in different coalitions, in that each is required to conform to similar provisions regardless of where they are located.

However, the orders are not identical and do provide flexibility in consideration of differences in climate, geology, and

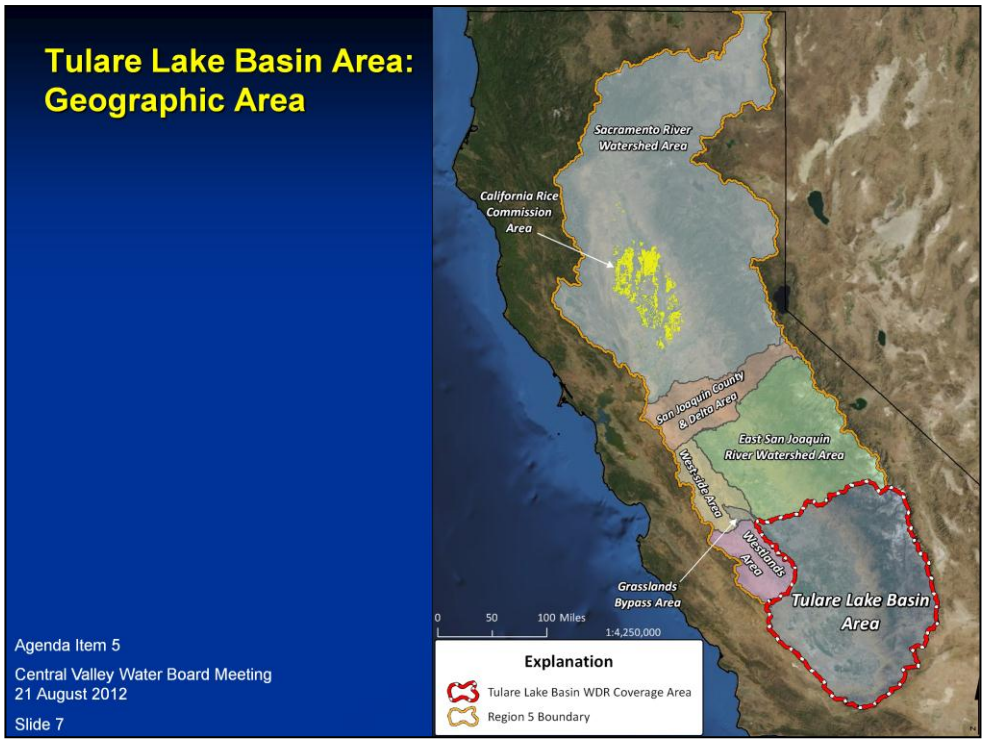
hydrology. Brent's and David's presentations will discuss some of the unique features of the Tulare Lake Basin Area and with this Order.

Finally, growers that choose not to join a third-party group would not apply for coverage under this draft order, but would need to comply with an individual order.

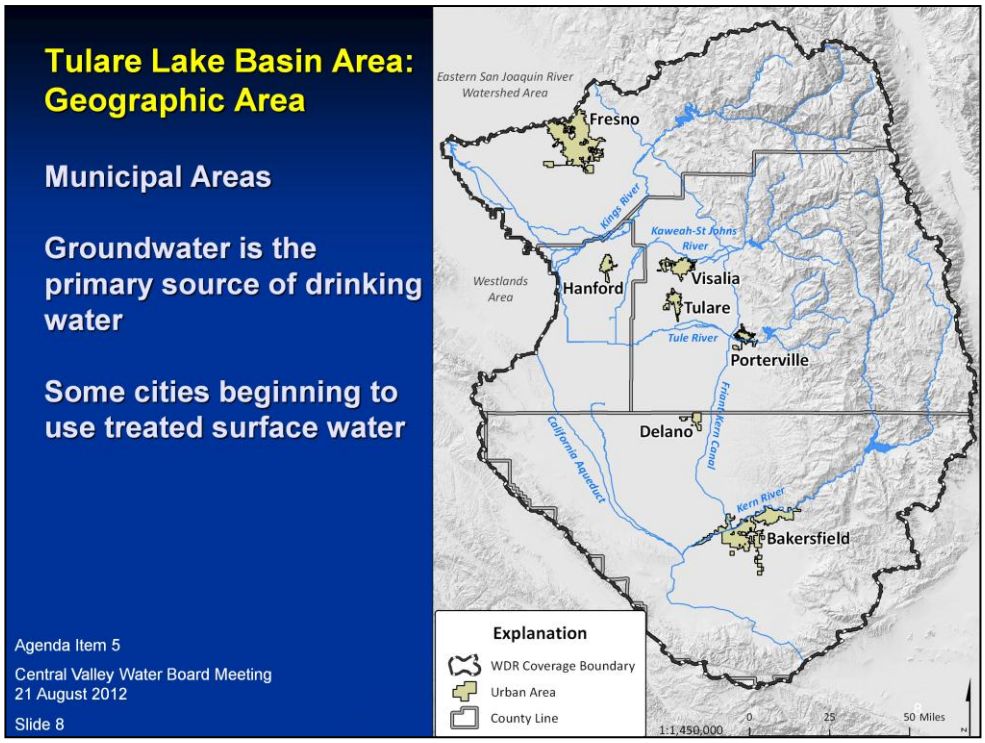
I will now turn the presentation over to Brent Vanderburgh, who will describe the Tulare Lake Basin Area.



Good afternoon Mr. Chairman and members of the Board. My name is Brent Vanderburgh. I am an Engineering Geologist in your Fresno Office. This morning I will present a brief summary of the geography, agriculture, surface water, and groundwater as they occur in the Tulare Lake Basin Area.

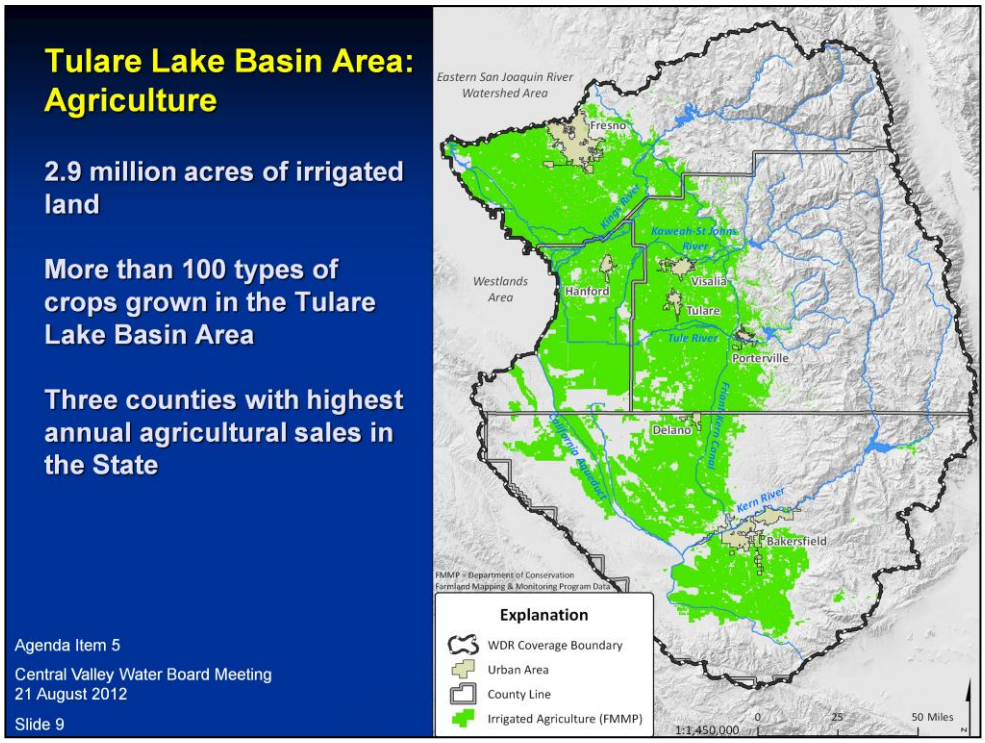


The Tulare Lake Basin Area encompasses the Tulare Lake Basin excluding the area of the Westlands Stormwater Coalition. In this slide the Tulare Lake Basin Area is shown outlined in red near the bottom of the slide, and Westlands Stormwater Coalition is located directly to the west, or left, of this area. The Eastern San Joaquin River Watershed area, subject of a June information item, is directly north, or above, this area.



The tan areas of this slide represent some of the larger municipalities within the Tulare Lake Basin Area, with Fresno to the north and Bakersfield to the south. Many other communities are spread throughout the area. County lines have been added to this slide to help identify the locations of the cities.

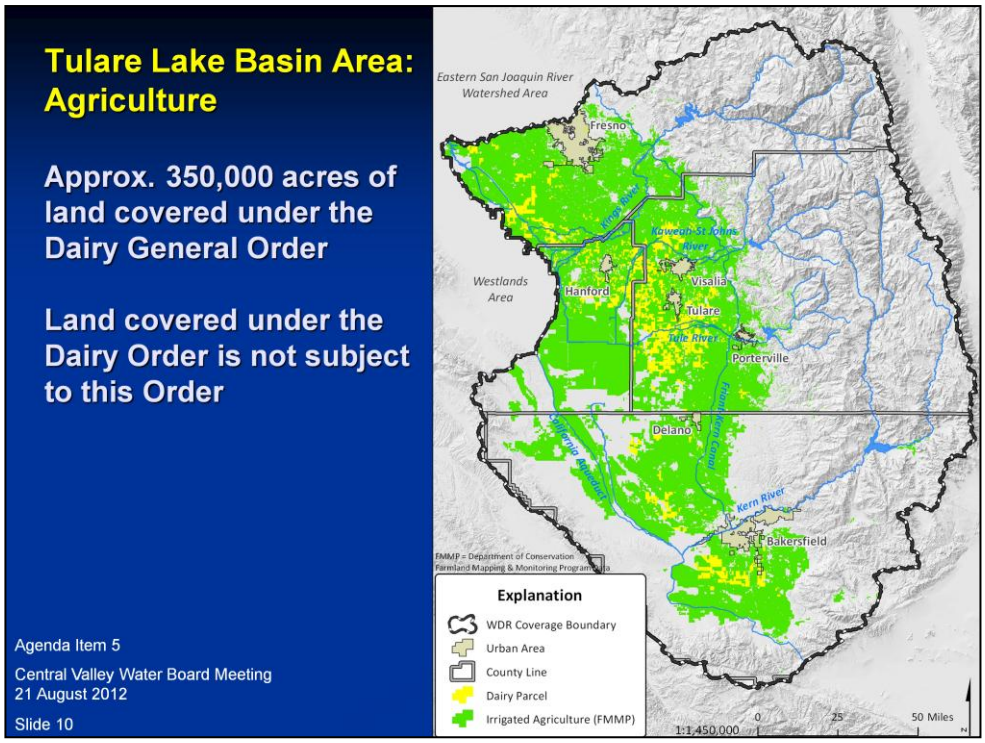
Groundwater is the primary source of drinking water supply for the major cities and smaller communities in the Tulare Lake Basin Area, although in recent years several cities have begun to use treated surface water to supplement the groundwater supply.



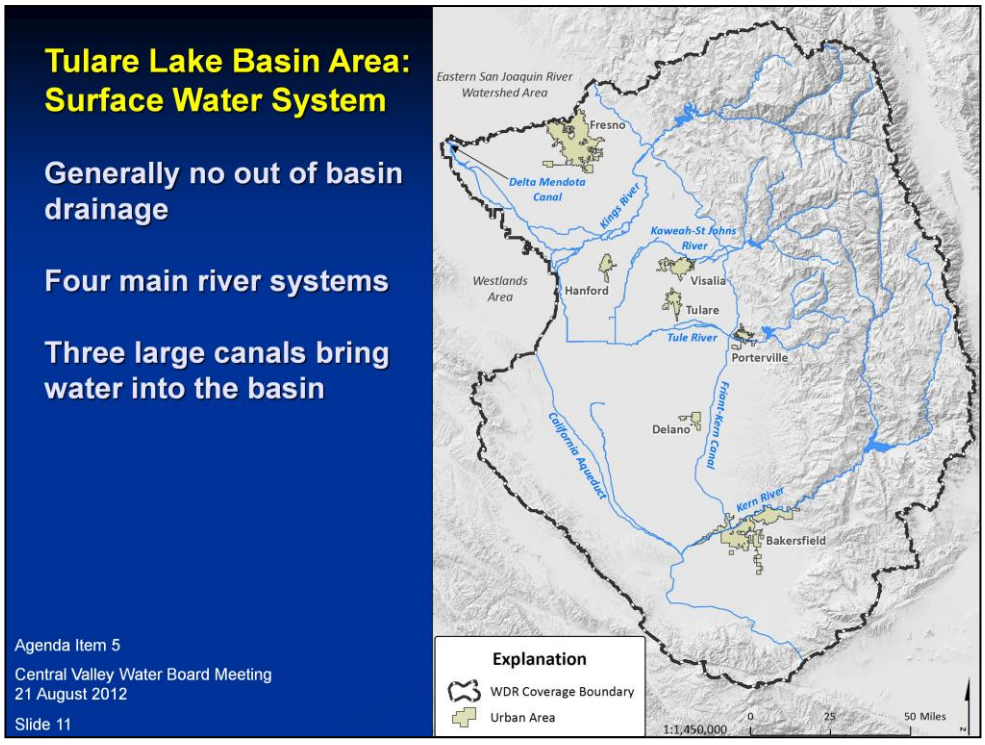
There are approximately 2.9 million acres of irrigated lands in the Tulare Lake Basin Area. The green areas of this slide are based on California Department of Conservation Farmland Mapping and Monitoring Program data and represent these irrigated lands.

Over 100 crops are grown in the area. Top crops include: forage and grains, grapes, almonds, cotton, citrus, stone fruit, and vegetables.

Of the four counties included or partially included in the area, Fresno, Tulare, and Kern Counties consistently produce the highest annual agricultural sales in the state.

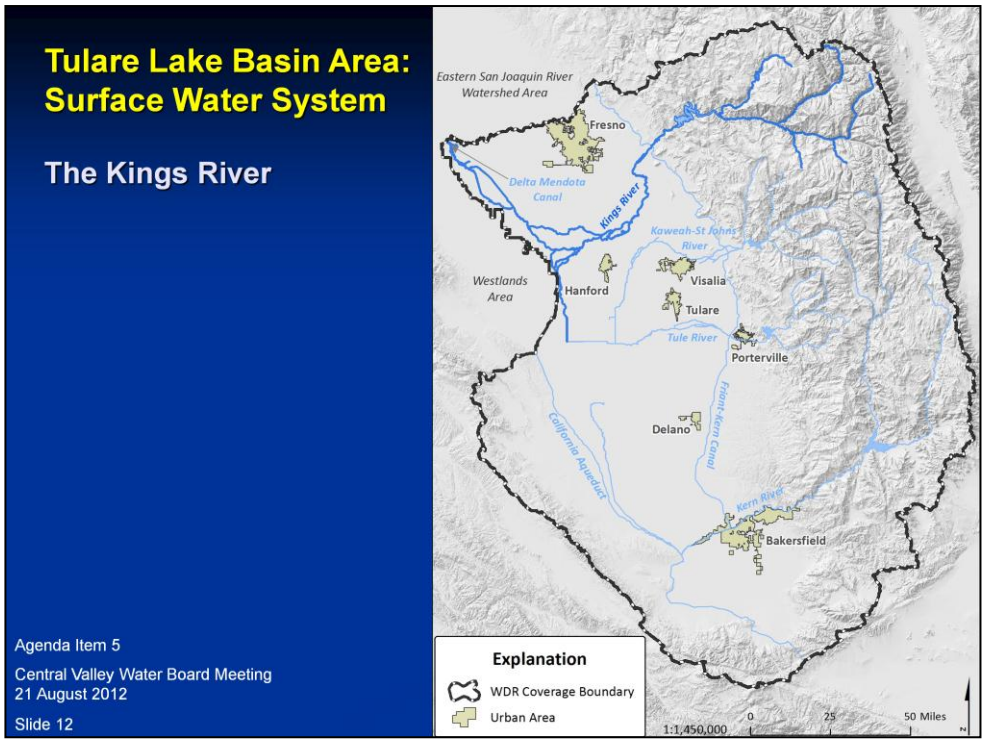


Of the 2.9 million acres of irrigated land in the Tulare Lake Basin Area, 350,000 acres of land are associated with dairies. The yellow portions of this slide show the distribution of dairy land in the area. These lands, and the 600 or so dairies with which they are associated, are regulated under the Dairy General Order adopted by this Board in 2007 and are not subject to the Order being discussed today.

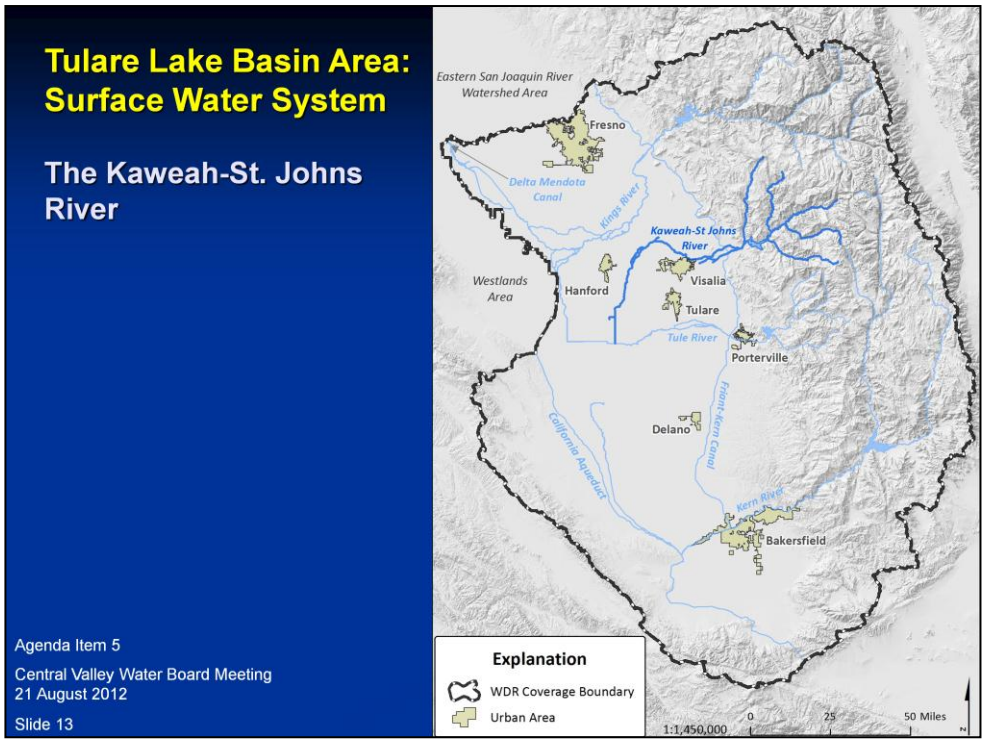


Now I will discuss surface water. This slide shows a general overview of the major surface water systems in the Tulare Lake Basin Area. The area is essentially within a closed basin, which means surface water flows rarely leave the basin except in years of high precipitation. Surface water originating within the area comes from four main river systems, and during wet years, other additional smaller streams. Surface water is also imported in to the area via three large canal systems. These major surface water systems will be highlighted in the following slides.

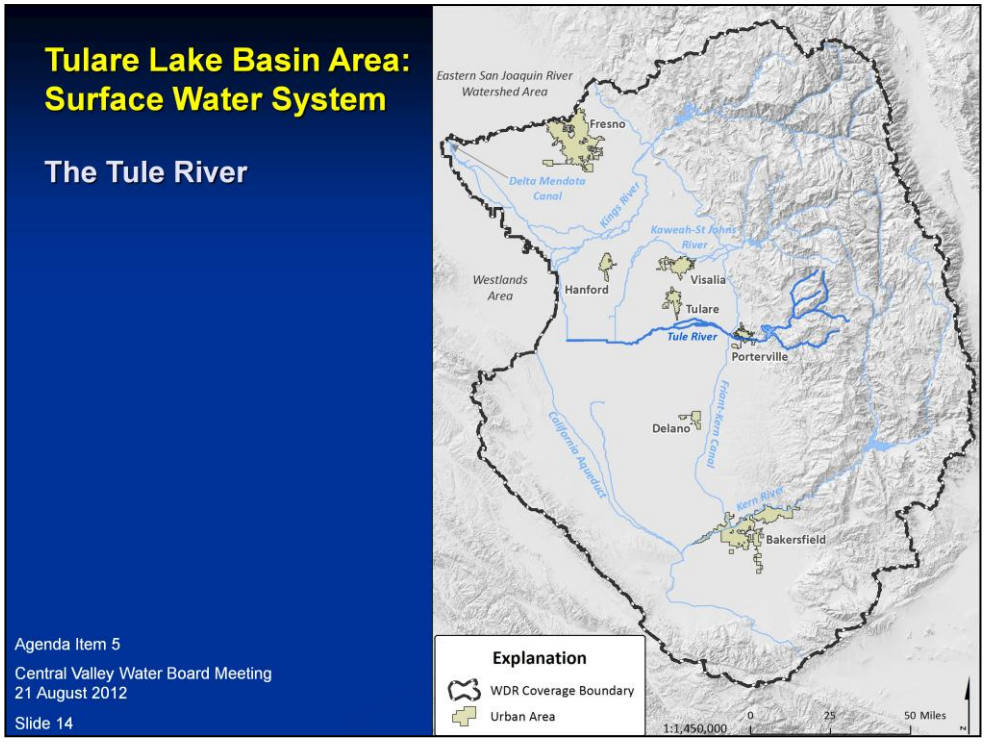
From North to south, the four main river systems include:



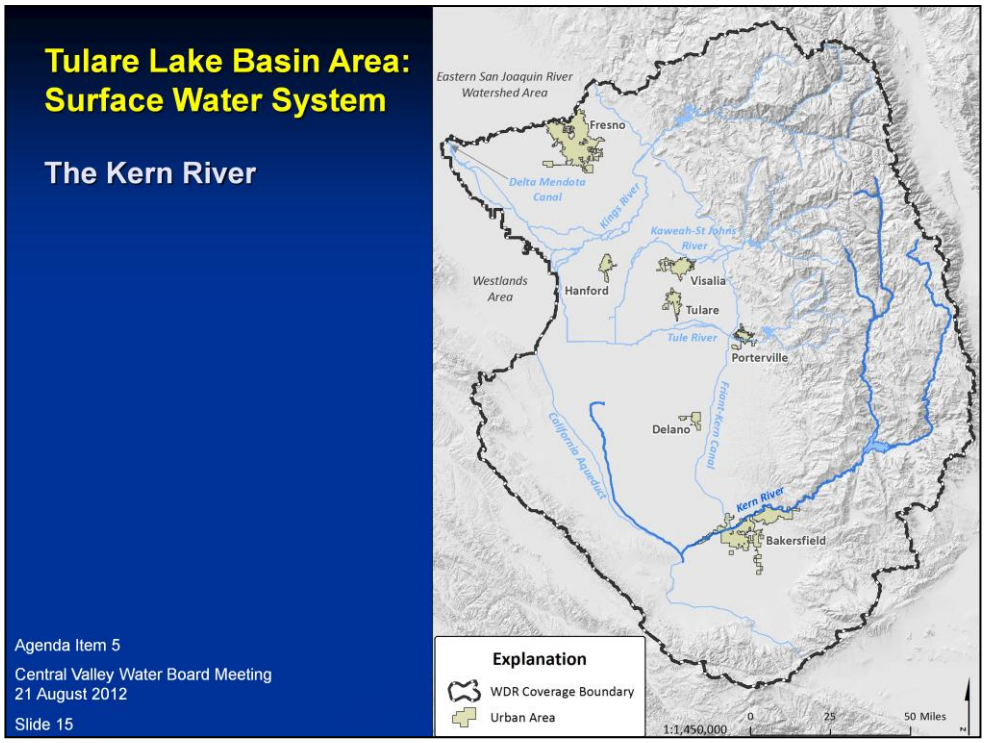
The Kings River…



The Kaweah-St. Johns River…



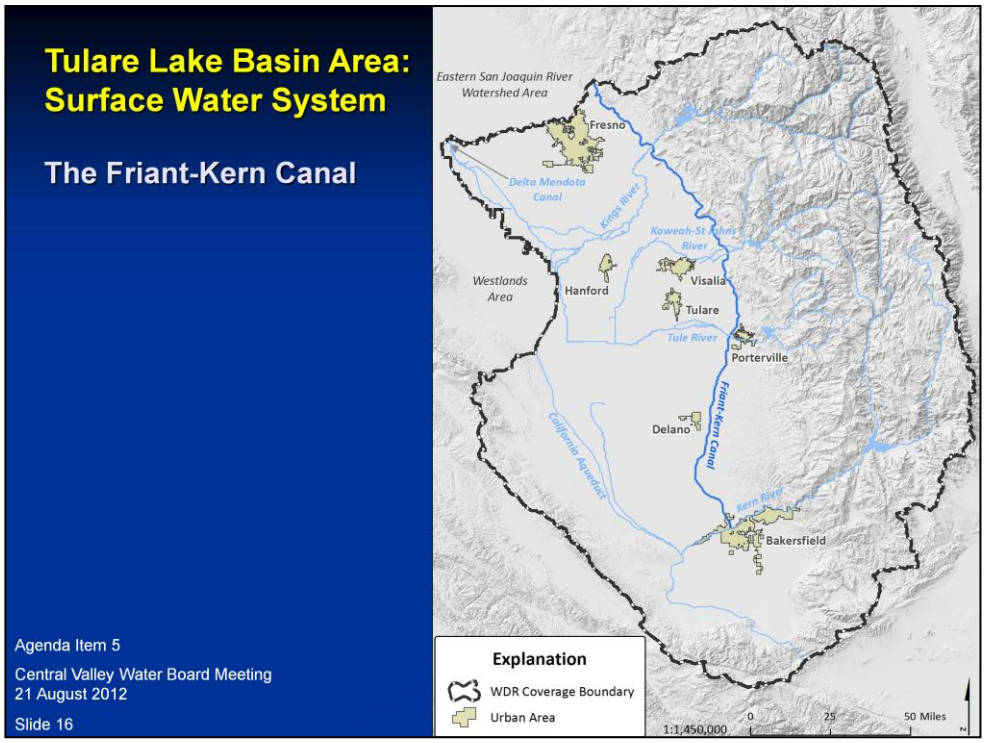
The Tule River…



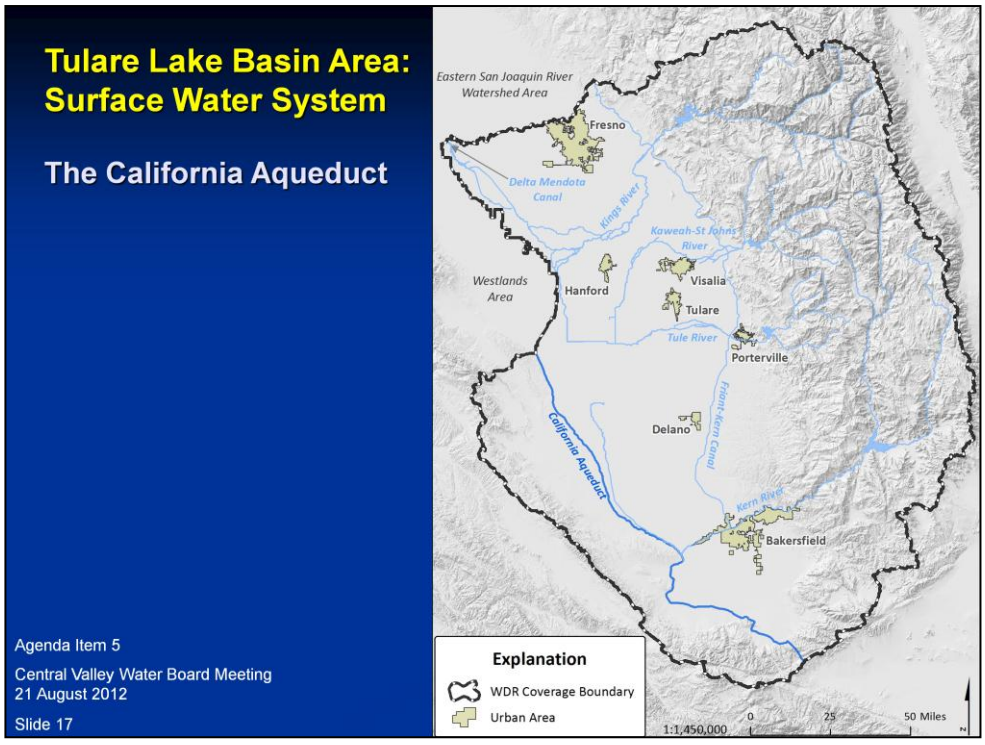
…and the Kern River.

There is not enough surface water originating in the Tulare Lake Basin Area to support the needs of agriculture, so surface water is imported into the area through three large canal systems.

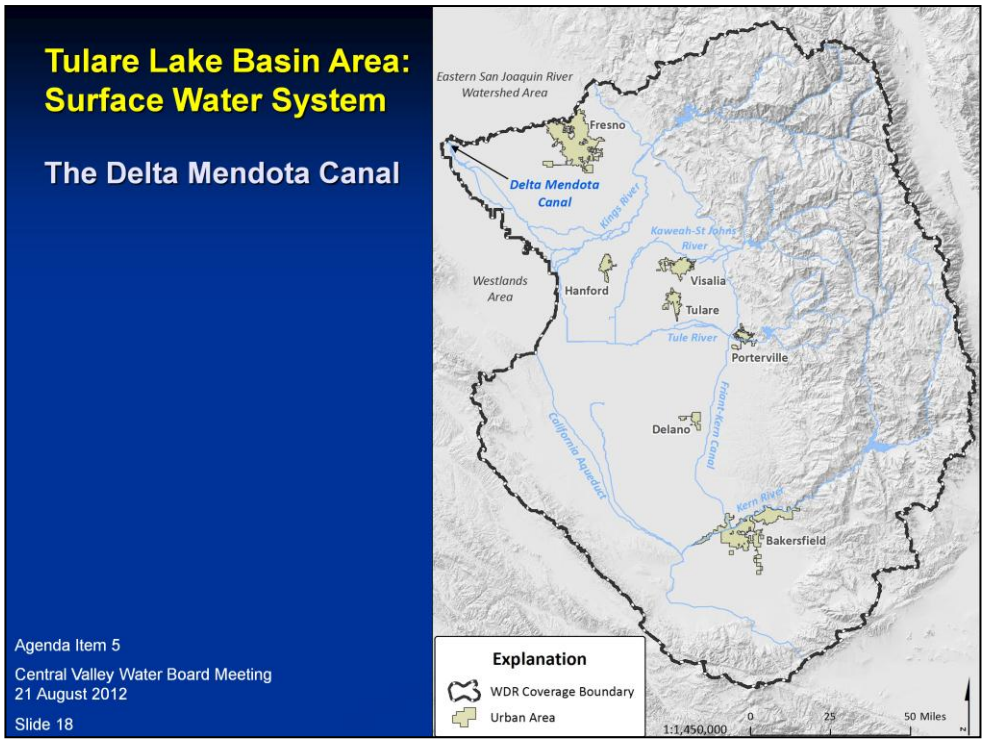
The three canals that import water into the area include:



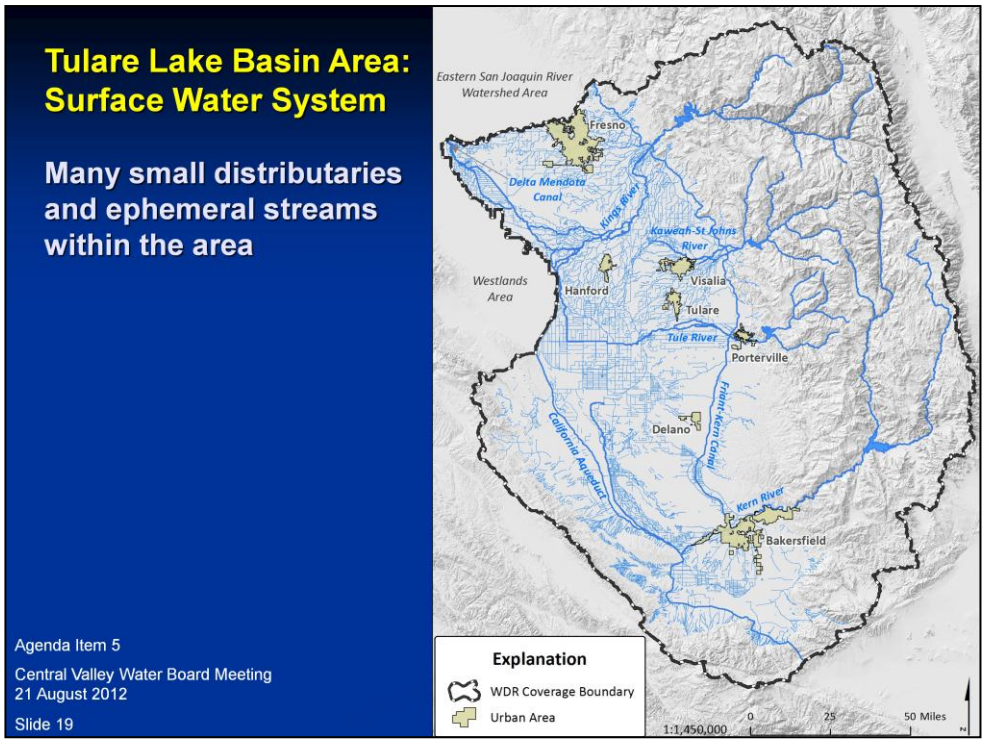
The Friant-Kern Canal…



The California Aqueduct…



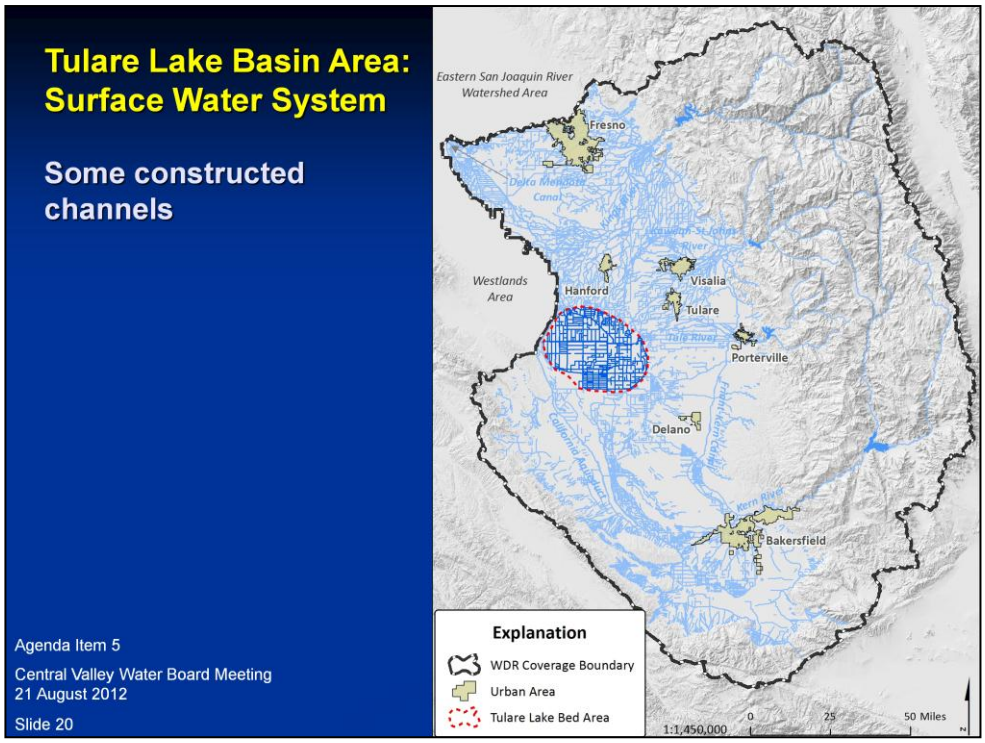
…and the Delta Mendota Canal in the northwest corner of the area, which supplies water to the James and Tranquility irrigation districts.



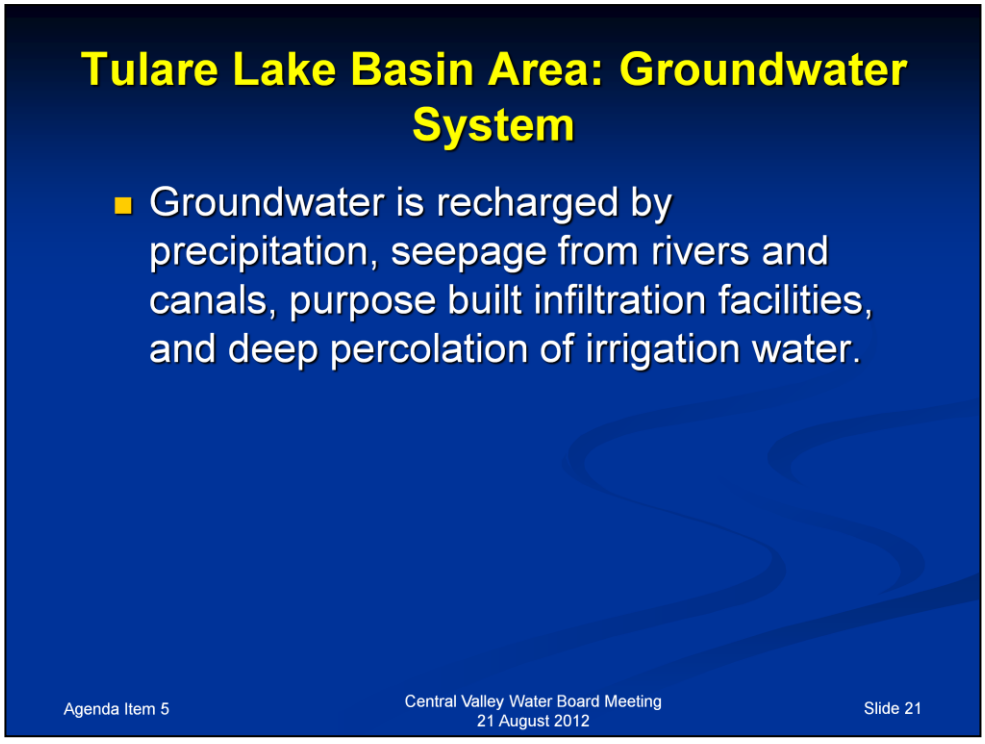
In addition to the major surface water features mentioned in the previous slides, numerous smaller streams and distributaries of the main river systems spread across the valley floor. Most of these smaller streams are dry for a portion of the year. These distributary streams, and other smaller streams, which flow only during a portion of the year are known as ephemeral streams. Some streams may also be considered ephemeral due to the control of their flow by water districts as they distribute water for use by their members. Water Quality monitoring of ephemeral streams necessitates a different monitoring strategy than that used to monitor streams with year round or perennial flow.

Many of the natural stream channels shown on this map are now used for distribution of surface waters for agriculture and other purposes. Many have been channelized, and the details of their natural drainages have been altered. In addition to the natural, or modified channels, many man-made conveyance

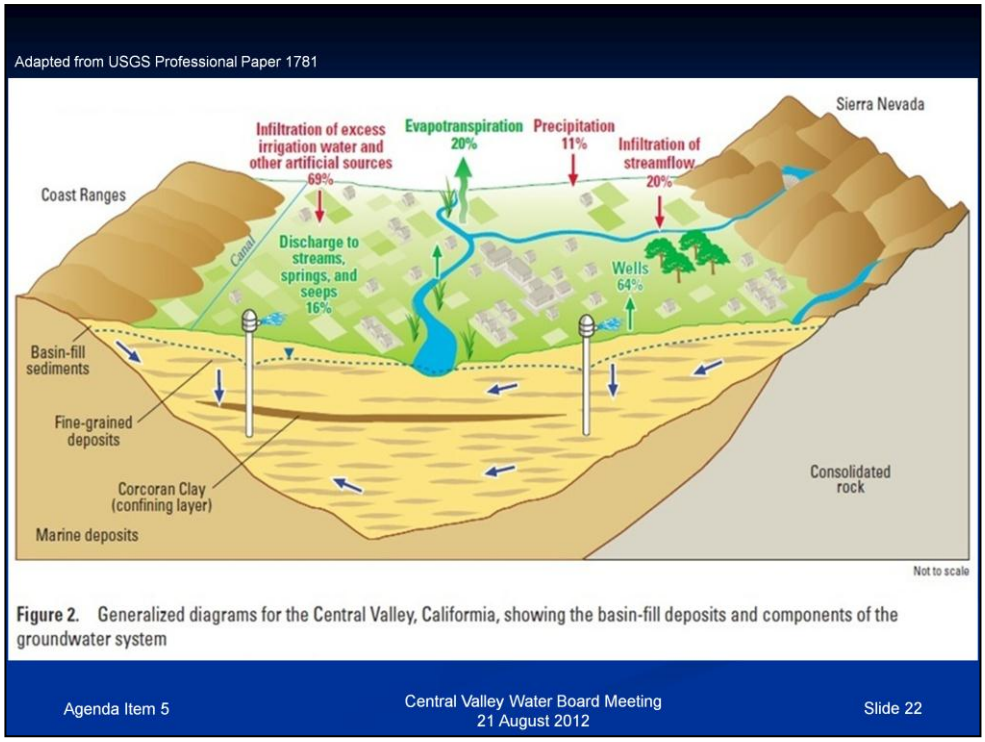
structures, or canals and ditch systems, have been created to distribute irrigation water over vast areas of farm land.



Constructed conveyance structures exist throughout the Tulare Lake Basin Area, an example of this is most clearly demonstrated in the former Tulare Lake bed. This grid-like pattern is not typical of natural stream channel patterns found in the Central Valley.

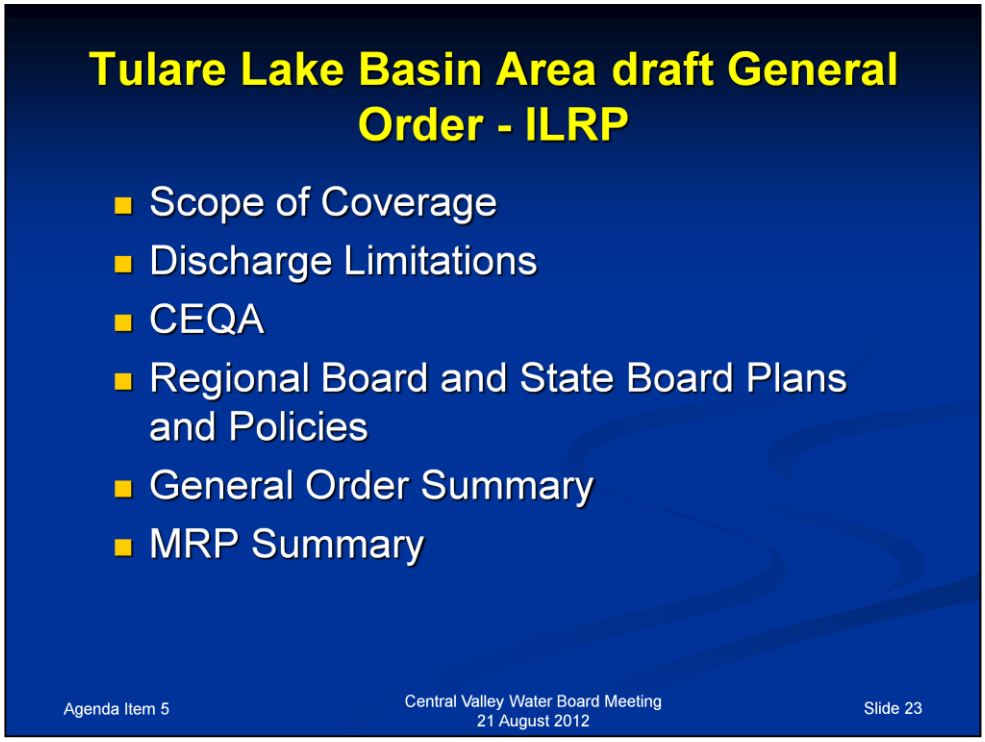


Next I want to briefly talk about the groundwater system in the area. Almost exclusively, the groundwater that is important to irrigated agriculture occurs in the sediments of the valley portion of the area. Currently this groundwater is recharged by infiltration from precipitation, seepage from rivers and man-made conveyance structures, purpose built infiltration facilities, and mostly, by infiltration of water applied to cropland.



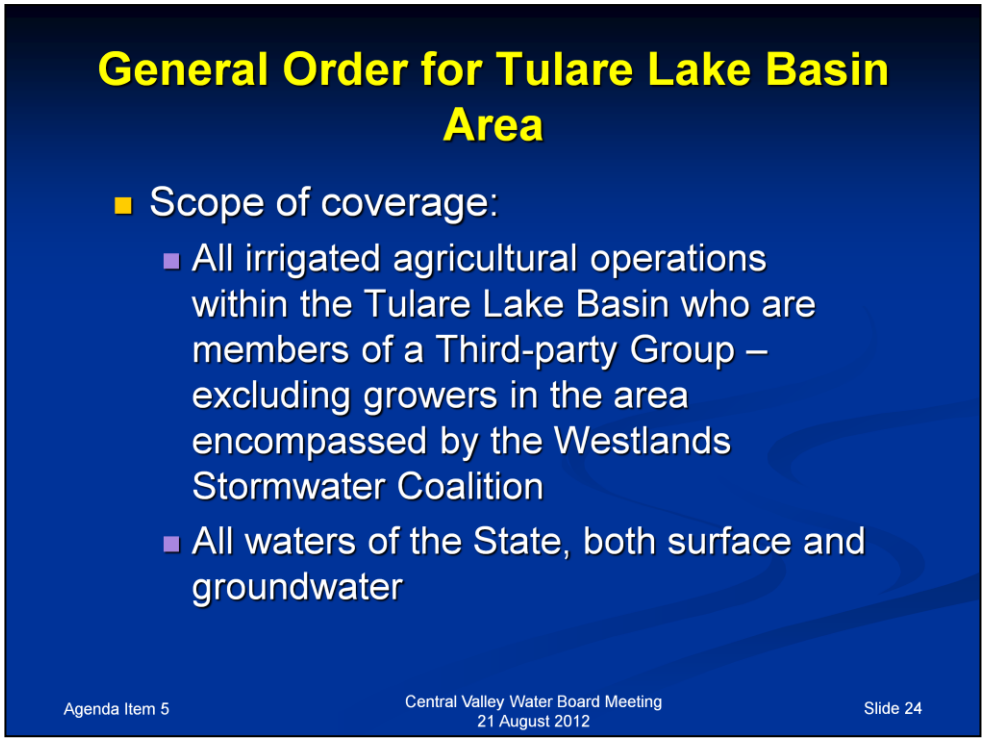
Finally, this slide published by the United States Geological Survey illustrates the several ways groundwater is recharged and discharged within the Central Valley. Note that the combination of precipitation and infiltration of stream flow only accounts for 31% of total recharge, with the infiltration of irrigation water and other artificial sources constituting the remaining 69%. This diagram represents the general contributions to groundwater recharge for the entire Central Valley. The drier climate conditions and ephemeral nature of streams within the southern San Joaquin Valley will likely result in lesser contributions from precipitation and streamflow, and greater contributions from irrigation water and other artificial sources within Tulare Lake Basin Area.

This completes my overview of the Tulare Lake Basin Area. Unless there are questions from the Board, I will now turn the presentation over to David Sholes who will describe the draft Order and Monitoring and Reporting Program.



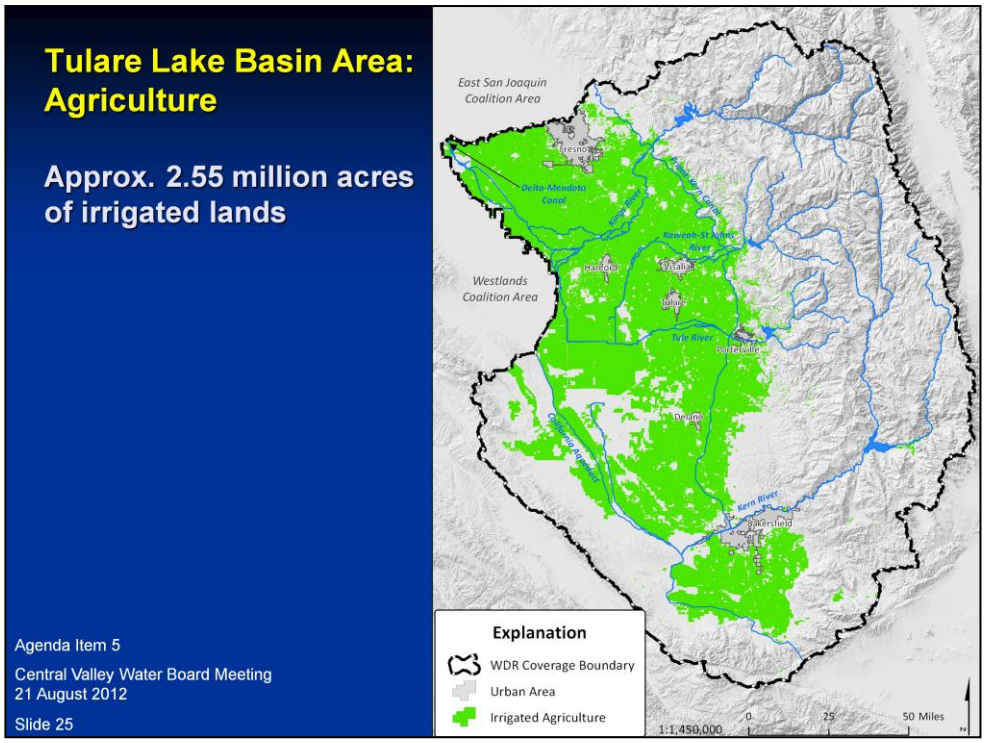
Good afternoon Chair Longley and members of the Board. I am David Sholes, a Sr. Eng. Geologist in the Ag/Plan unit in your Fresno office.

I will begin my presentation of the draft Order by first covering four topics that affect many parts of the Order and MRP. These are the Scope of coverage, the discharge limitations, CEQA, and Regional and State Board Plans and Policies. I will follow this discussion with a summary of the draft Order and MRP.

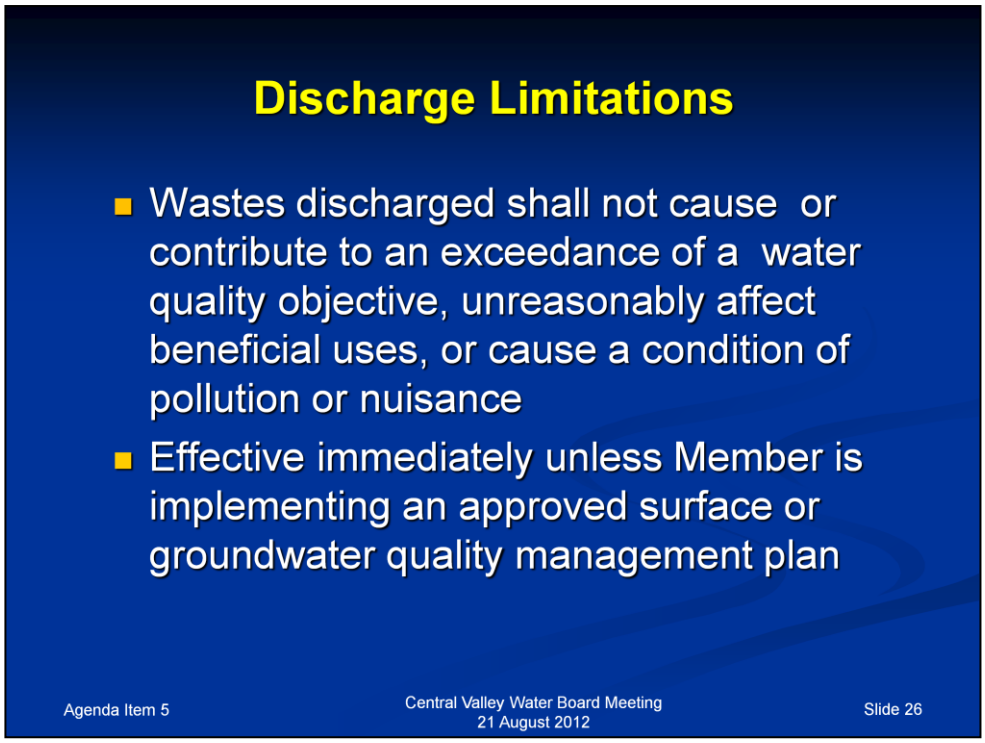


With respect to the scope of coverage – This draft Order will cover all irrigated lands within the TLBA whose owner or operator is a member of a Third-party group. The draft Order is written so that one or more third-parties may represent growers under this draft Order. Just not the same growers.

The draft Order covers discharges to all waters of the state within the TLBA, both surface and groundwater.

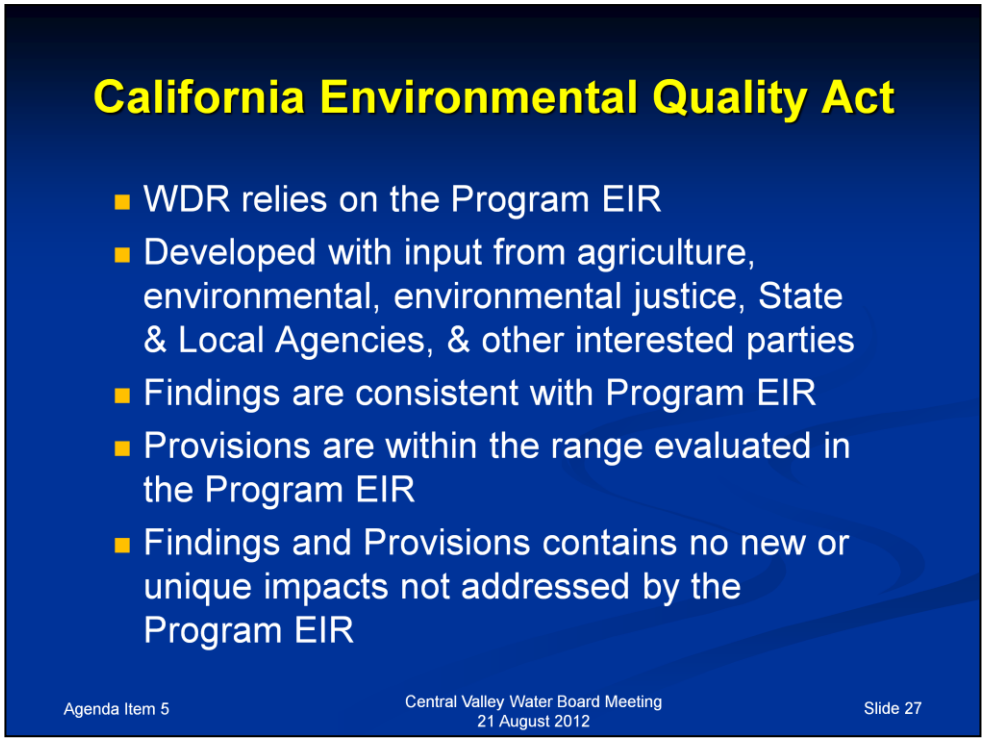


The green areas of this slide show the irrigated lands within the TLBA. The total irrigated acreage, approximately 2.55 million acres represents total agricultural lands less the dairy lands.



This proposed Order contains waste discharge limitations for both surface and groundwater. These limitations require that discharges not cause or contribute to an exceedance of a water quality objective, unreasonably affect beneficial uses, or cause a condition of pollution or nuisance.

These limitations become effective upon board adoption of the Order, but the proposed Order allows up to 10 years for implementation of management practices, provided the Member is implementing an approved surface or groundwater management plan. And this time schedule may be modified by the Board if compliance is infeasible within that time period.



This draft Order relies on the Irrigated Lands program Environmental Impact Report, or EIR, to fulfill the requirements of the California Environmental Quality Act, or CEQA.

The findings and provisions contained within this draft Order are within the range of alternatives evaluated in the EIR and are not expected to cause any significant adverse environmental impacts not already considered by the EIR; therefore the Program EIR is applicable to this draft Order.

Finally in our list of general topics, the draft Order complies with Regional Board and State Water Board plans and policies and these include the Anti-degradation policy, the Non-point Source Pollution Control Policy, and the Tulare Lake Basin Plan.

A summary of these and other policies that this Orders addresses may be found in the Information Sheet, which is Attachment A of this draft Order.

Lets move into the particulars of the draft Order.

This draft Order is designed to be implemented by a third-party group on behalf of the members of that group within the TLBA.

The draft Order contains requirements for both third-parties and their members, which I will summarize on the next slides.

As I begin talking about third-party requirements, it is important to remember that the third-party is not a discharger, but represents growers who are.

Because the third party is not a discharger, the draft Order does not contain any enforcement provisions with respect to the third-party other than to remove them as representatives of growers if their performance does not meet the mark. The third-party structure has worked for the current program and staff fully support continuing with this approach. There have been lessons learned over the past several years, and these are incorporated into the third-party requirements which I will now discuss.

The requirements for the third-party include an initial application to represent growers, transparency requirements such as identifying the management structure of the

organization and providing members with a summary of fee expenditures for the program.

The third-party would also organize enrollment of its members into the Order, and conduct education and outreach.

Much of the monitoring, data gathering, information distribution, educational outreach, and reporting to the Regional Board is either done or coordinated by the third-party, who fulfills these requirements on behalf of its membership.

This draft Order also contains requirements for the members of the third-party group.

These include a requirement that the owner or operator must enroll with a third-party or Regional Board to be covered by this Order.

Once enrolled, the member would be required to implement management practices necessary to improve and protect water quality, minimize the application of excess nutrients, and prevent erosion and the discharge of sediment into waters of the State.

Members would be required to participate in outreach and education activities at least once a year, if the irrigated land is in a designated high vulnerability areas or where a Surface Water or Groundwater Quality Management Plan is in place.

Members would have to abide by the requirements of the Order, and provide the third-party with information it may require to document compliance.

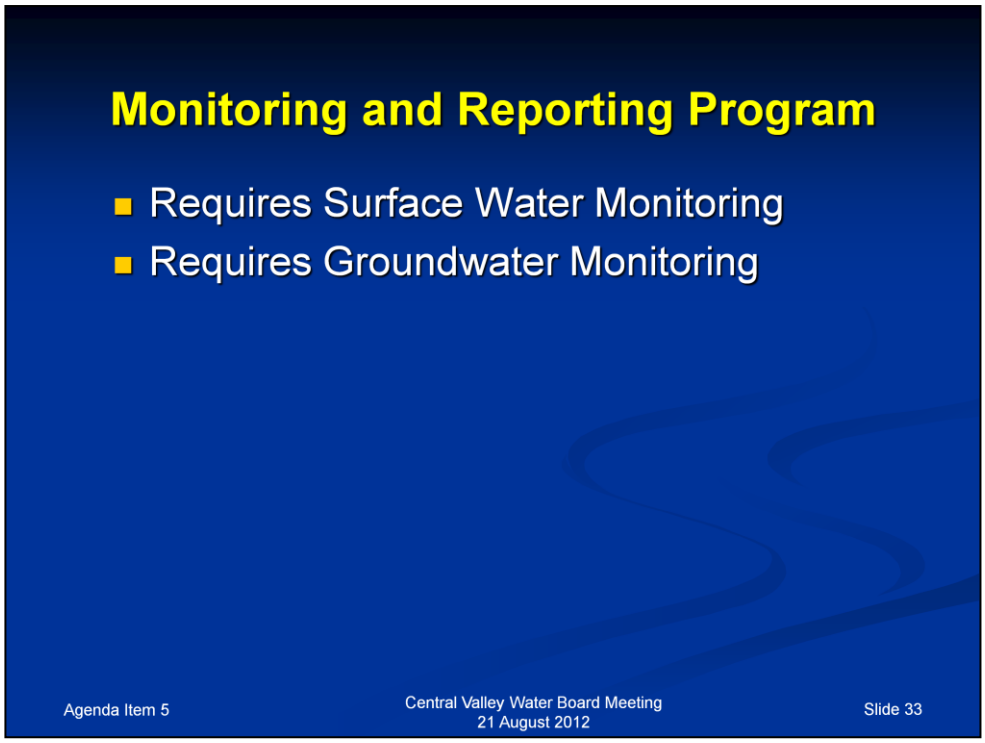
Members who construct new ponds would have to have it designed by a qualified person permitted to do so under the provisions of the California Business and Professions Code. The intent of this requirement is to ensure that ponds are properly sized, do not present an erosion or sediment discharge issue, and if above ground, are stable.

And Members would have to permit representatives of the Board to inspect the irrigated lands property at reasonable hours and after appropriate notice.

Members would also submit a farm evaluation and a nitrogen budget to the third-party who would summarize these for reporting to the Regional Board in the Biennial Monitoring Report which I will discuss at the end of my presentation. Nitrogen budgets for irrigated lands in high vulnerability areas must be prepared by a nutrient management professional. If there is a potential to discharge sediment to a surface water, the member would prepare and implement a Sediment and Erosion Control Plan.

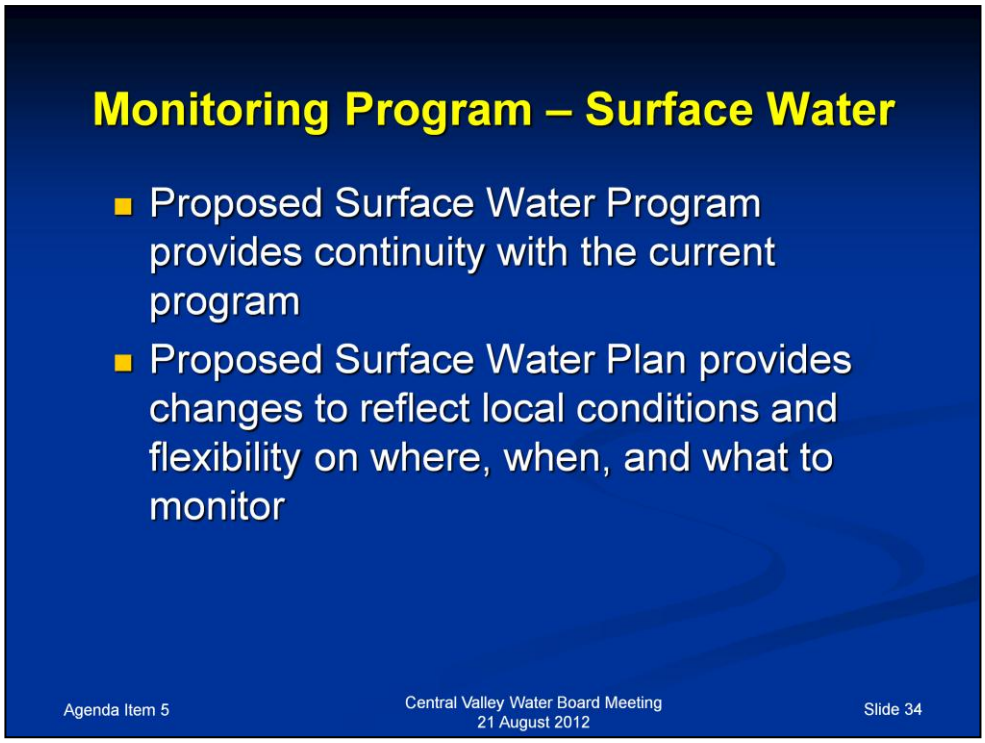
Templates for the Farm Evaluation, Nitrogen Budget and Sediment and Erosion Control Plans will be prepared by Regional Board staff in consultation with the third-party and other agencies and professional groups. Final templates will be approved by the EO before being distributed for use by third-party members.

Finally, because the Board is the lead agency for CEQA for this program, and therefore has responsibility for CEQA mitigation monitoring, the Member would be required to report to the third party any CEQA mitigation measures it may have implemented. The third party would then report them to the Regional Board in the Biennial Monitoring Report.



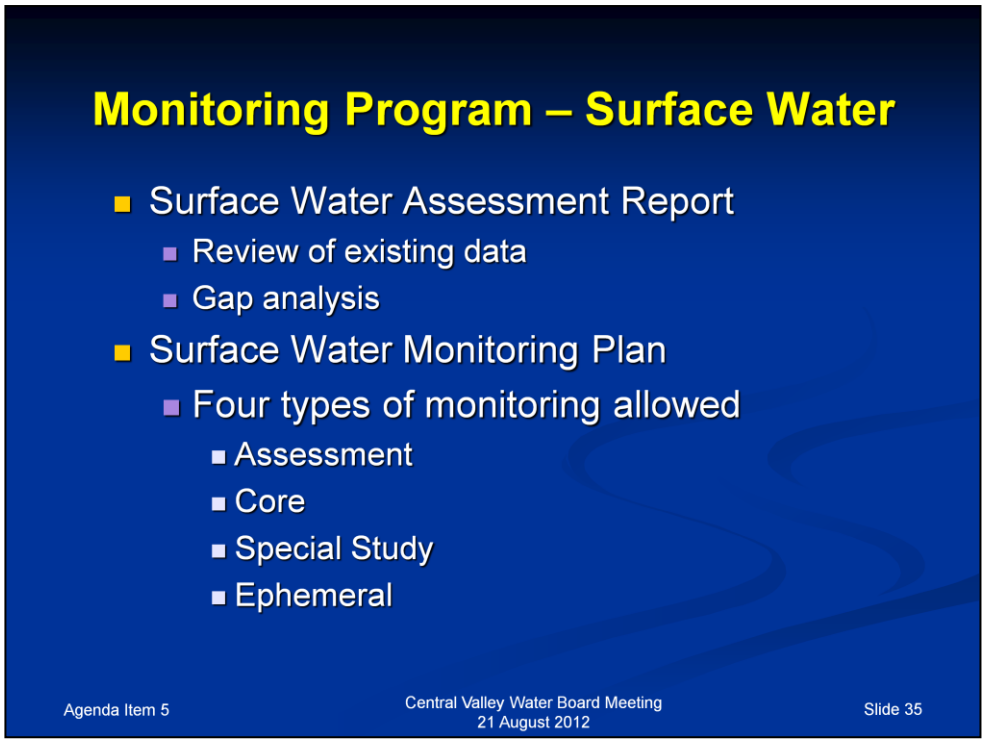
Now I'm going to shift from the draft Order to the draft Monitoring and Reporting Program, or MRP for short. The draft MRP includes requirements for the third-party to monitor both surface and groundwater to evaluate compliance with the Order, to monitor irrigated agriculture's effect on surface and groundwater quality, and to assist in the evaluation of which practices are protective of water quality.

I will start by describing the proposed Surface Water Monitoring Program.



The proposed Surface Water monitoring program is a continuation of the existing program. Currently approved Surface Water Quality Management Plans now being implemented, would continue under the new program.

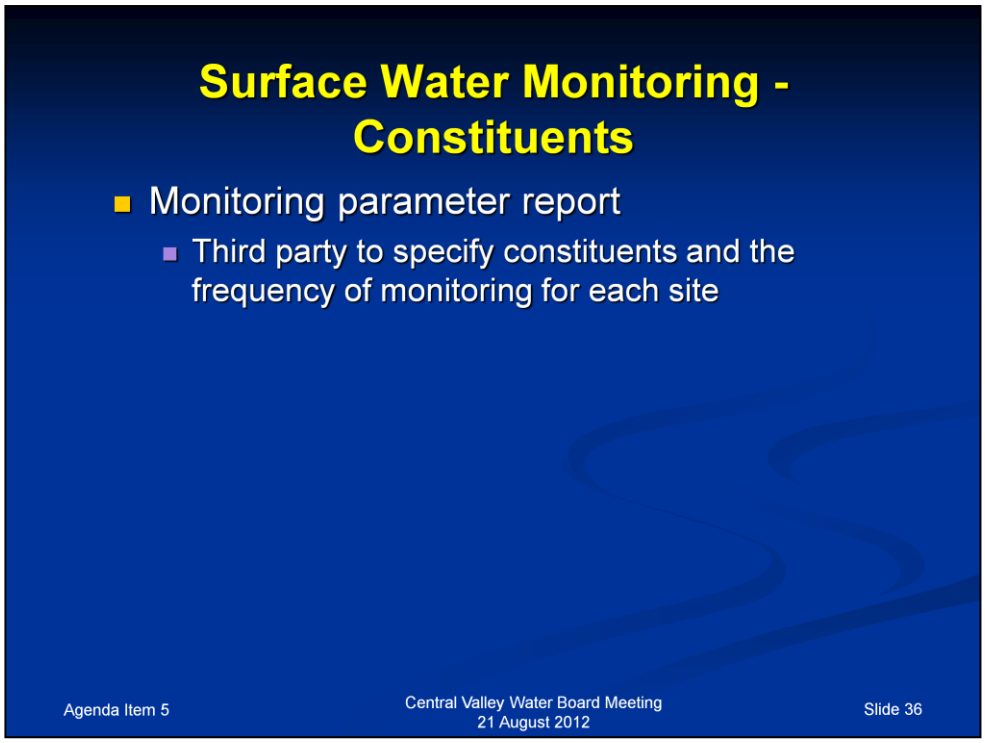
The proposed monitoring program provides some changes where the existing sampling strategy did not result in sampling of ephemeral streams, and provides greater flexibility in choosing which compounds may be constituents of concern subject to analysis.



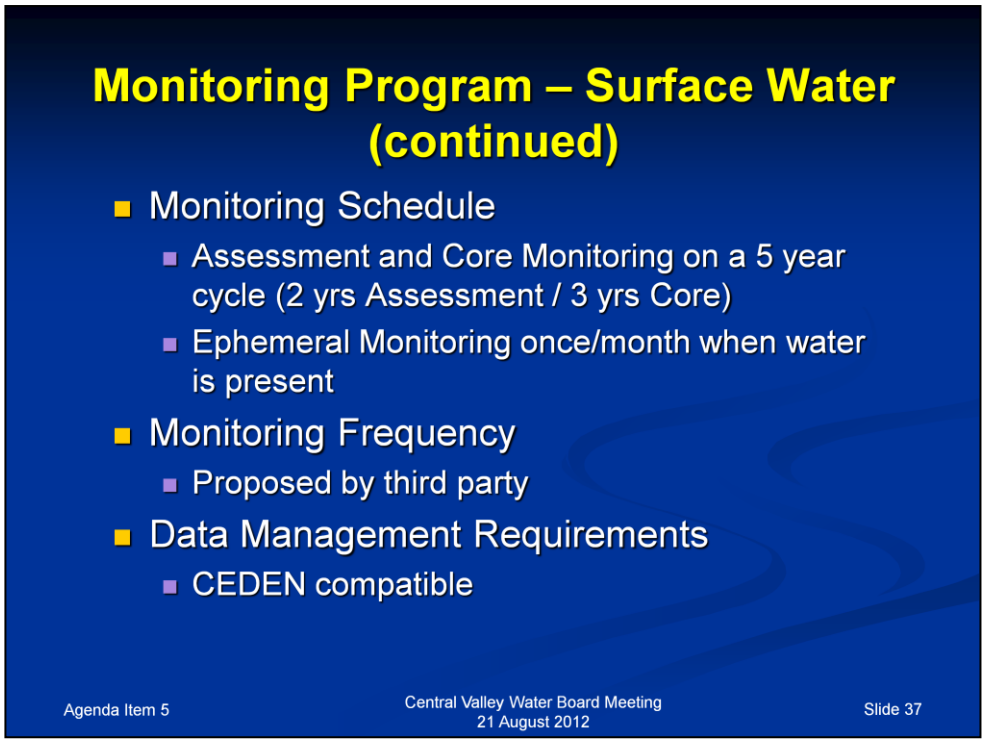
The Surface Water Monitoring Program starts with a Surface Water Assessment Report that would describe the current state of knowledge of surface water quality in the Tulare Lake Basin Area. The Report would also determine where there are gaps in the data, and this gap analysis is key to the next step, which is the preparation of the Surface Water Monitoring Plan.

The Surface Water Monitoring Plan is the guiding document describing how the third party will monitor surface waters in the TLBA.

The Plan would incorporate four monitoring strategies. Three of these strategies, assessment, core, and special study are currently used in the current program. Ephemeral monitoring requires monitoring of ephemeral streams once per month when water is present, and is necessary due to the seasonal nature of surface-water flows in the Tulare Lake Basin Area.



The third party would prepare a Monitoring Parameters Report for each sample site, which would specify the constituents and the frequency of the analyses, based on a review of existing data.

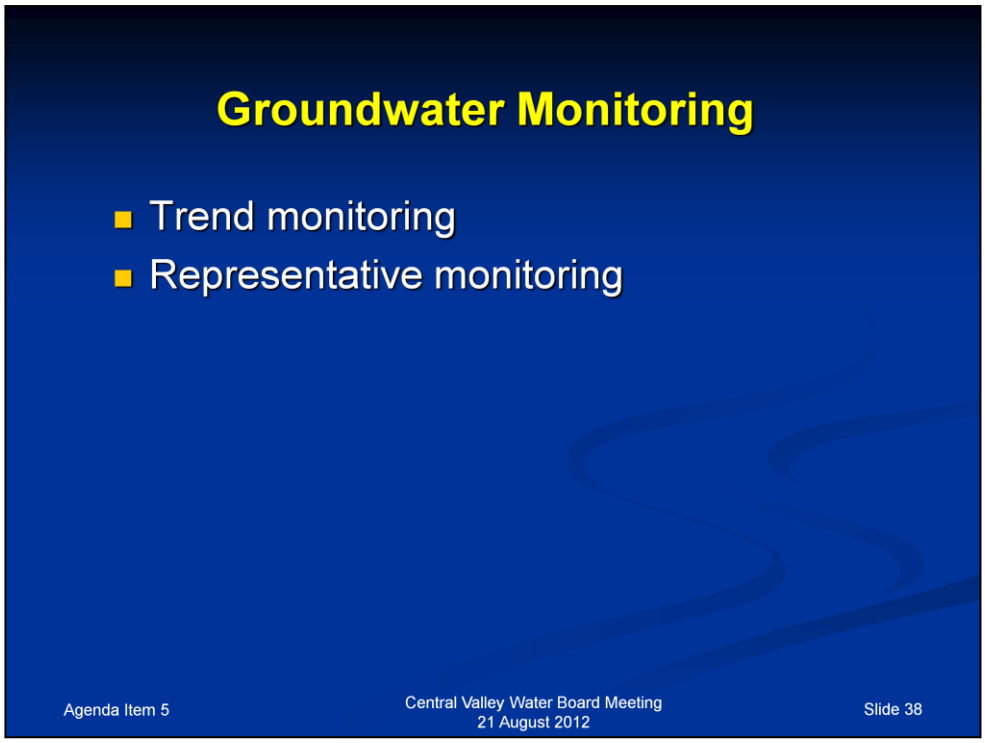


The Surface Water Monitoring Plan would require that Assessment and Core monitoring occur on a 5 year cycle, with two years of Assessment monitoring for a larger list of constituents, followed by 3 years of Core monitoring for a reduced list of indicator constituents. And as I mentioned in a previous slide, ephemeral streams would be sampled once per month when water was present.

Under the proposed program the third party would gain the flexibility to propose an appropriate frequency for testing of specific constituents of concern or parameters based on a review of existing data or conditions such as when the compound is applied to irrigated lands. The frequency, schedule and list of analyzed parameters would be subject to EO review and approval before implementation.

And with respect to data management, surface water data

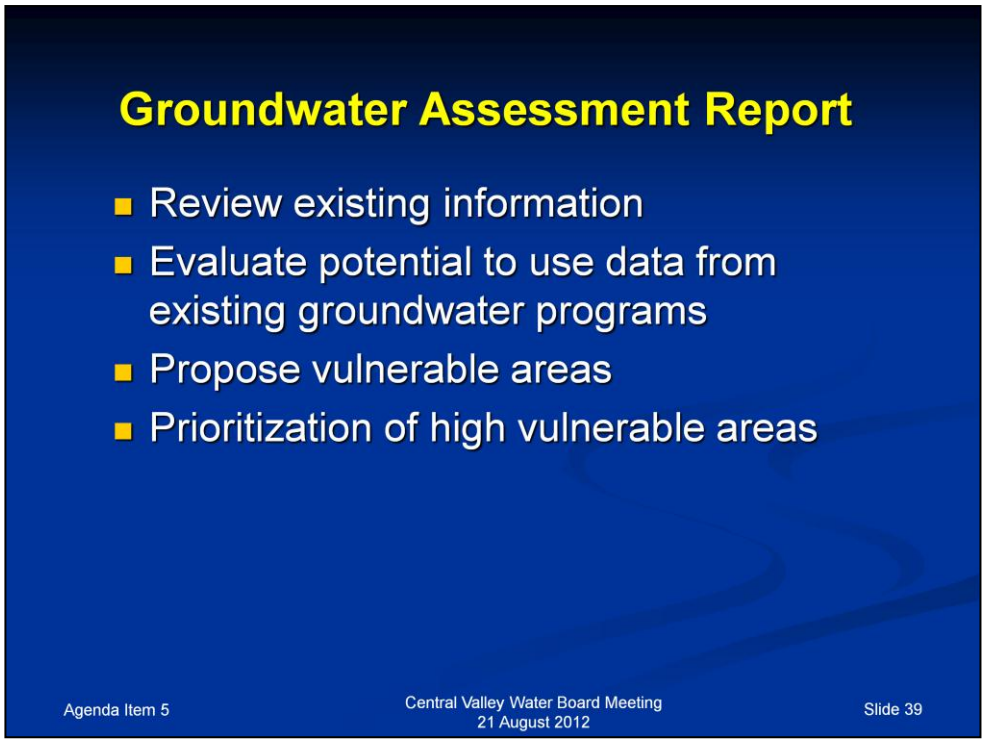
would be submitted quarterly in an electronic format compatible with the State Water Board's California Environmental Data Exchange Network or CEDEN database.



I will now move to the Groundwater Monitoring Program. Many of the details of the Groundwater monitoring program were described in the previous presentation and I will not repeat them here. Briefly, Trend monitoring will occur throughout the TLBA, and Representative monitoring will occur in high vulnerability areas.

The third party would be responsible to design the groundwater monitoring program. Trend and Representative monitoring must address the questions proposed by the Groundwater Monitoring Work Group for the ILRP, which were discussed in the previous presentation.

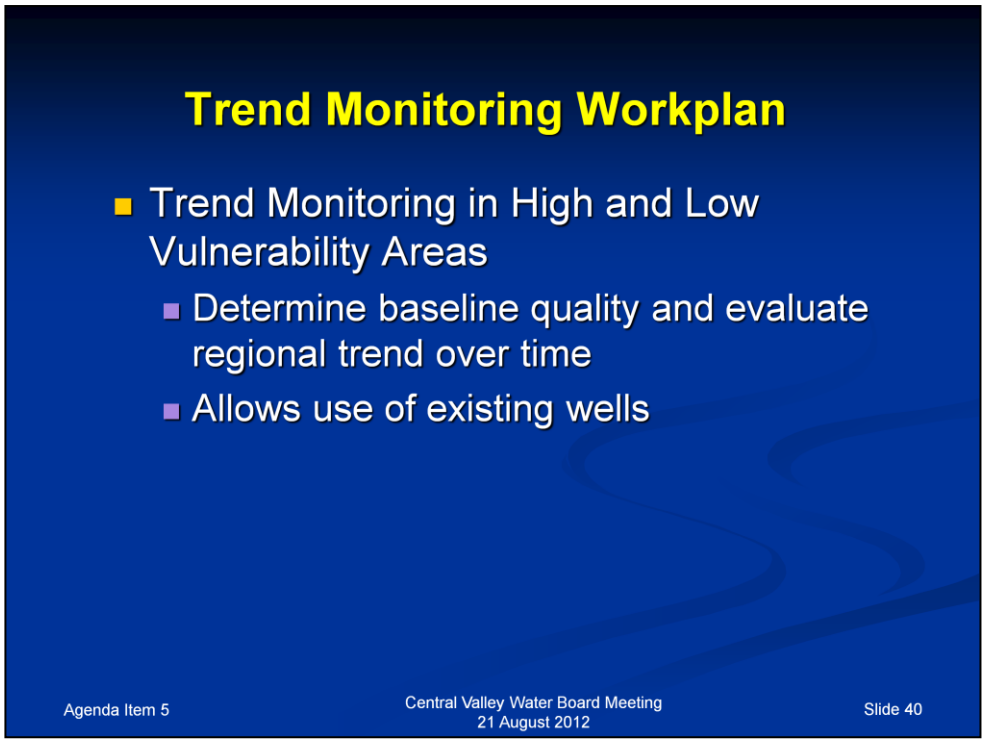
The Groundwater Monitoring Program starts with a Groundwater Assessment Report prepared by the third party.



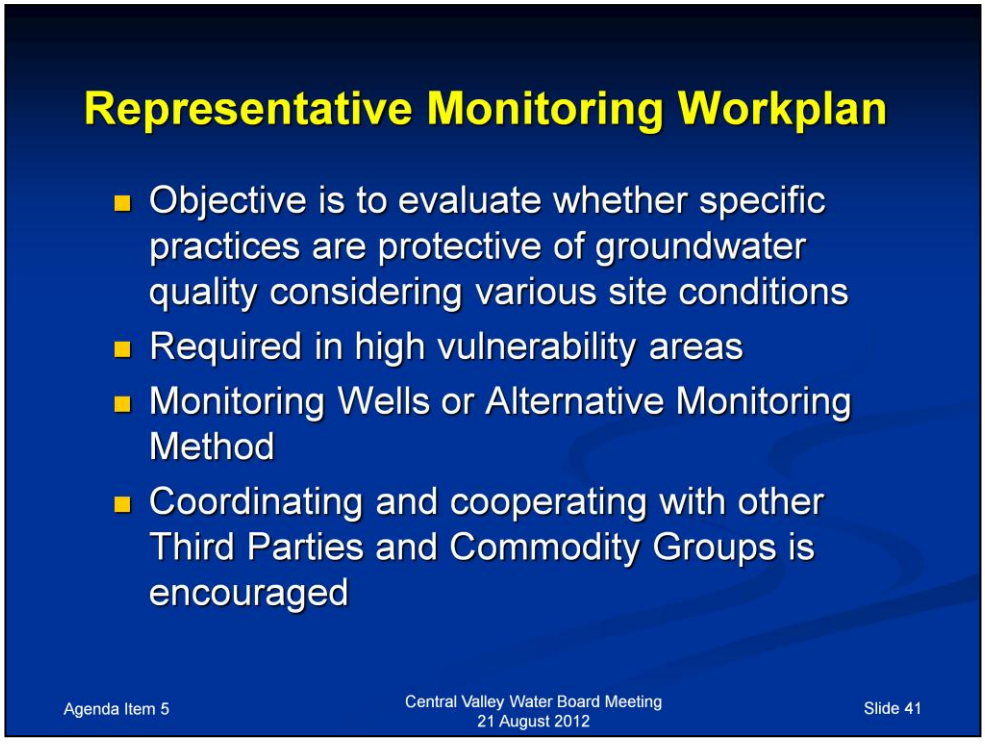
The Groundwater Assessment Report would review existing groundwater studies and data, and from an evaluation of this data the third party would propose areas of high and low vulnerable groundwater. After proposing these areas the third party would develop a prioritization of, and schedule for, how and when monitoring would occur.

The prioritization and time schedule would be subject to EO review and approval.

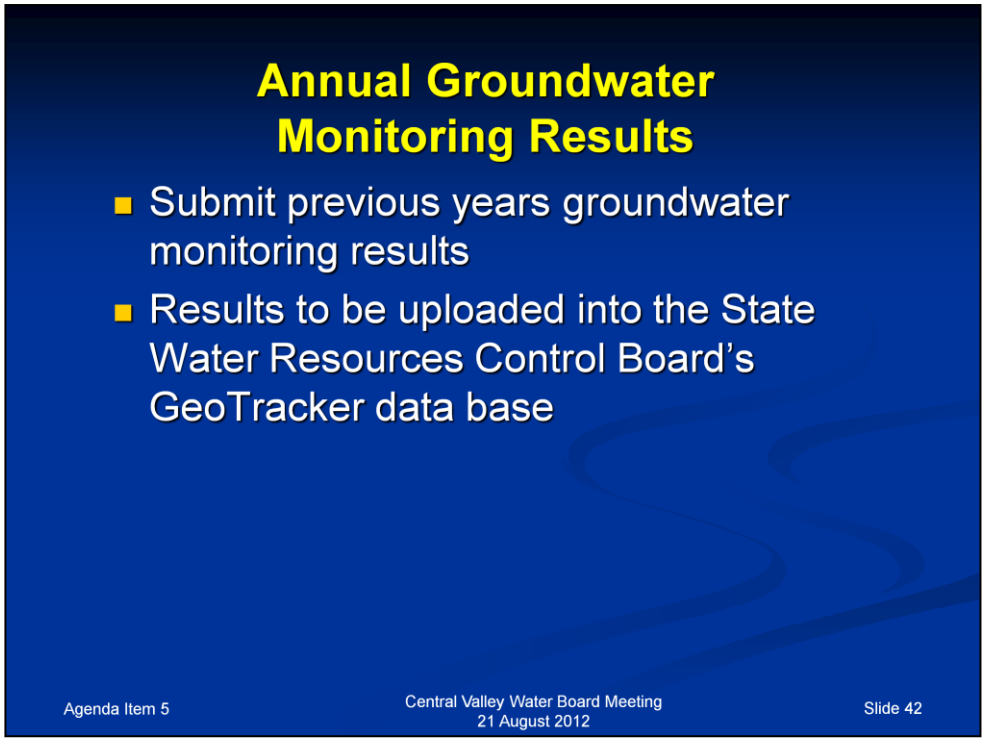
The next steps in the Groundwater Monitoring Program are the preparation of Trend and Representative Groundwater Monitoring Work Plans.



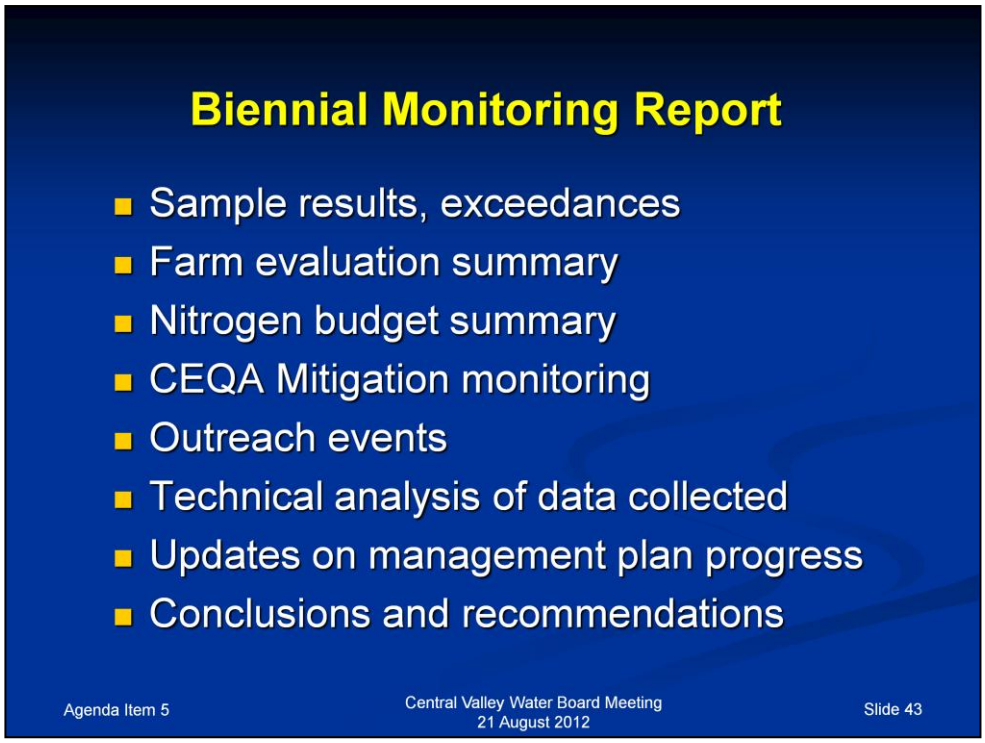
The third party would prepare a Trend Monitoring Work Plan describing trend monitoring in both high and low vulnerability areas, to evaluate baseline quality, and over time, identify trends in regional groundwater quality associated with irrigated agriculture. Once every five years, trend monitoring would include analyses for major cations and anions, and TDS. Trend monitoring allows the use of existing wells to monitor.



The third party would also be required to develop a representative groundwater monitoring work plan, to evaluate whether specific agricultural practices are protective of groundwater quality under various site conditions in high vulnerability areas. Here, groundwater Monitoring Wells will likely be necessary; however, we will consider proposals by the third party to achieve monitoring goals by alternative means, such as modeling or vadose zone monitoring, which were discussed in the previous presentation.



The draft MRP requires an annual submittal of the previous years groundwater monitoring results by the first of May of the subsequent year. Results would be submitted in spreadsheet format and uploaded to the State Water Board's Geo Tracker database by the third party.



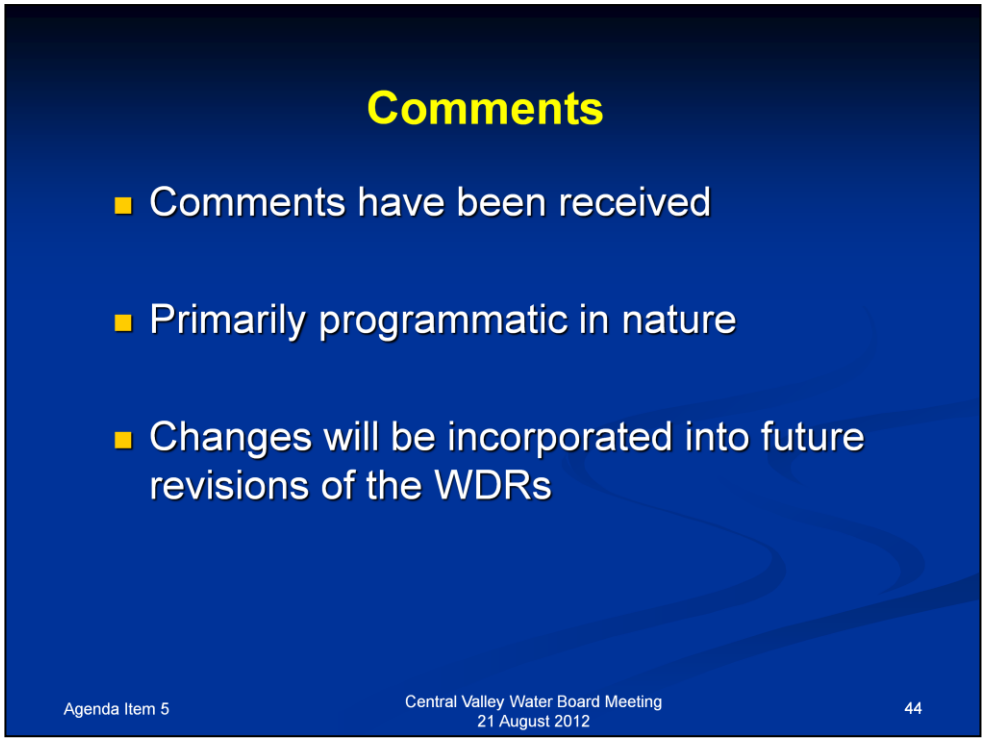
Finally, the capstone of the Monitoring and Reporting Program is the biennial Monitoring Report. This report is the mechanism by which the third party and the Regional Board will evaluate the effectiveness of the ILRP in the TLBA.

Every two years, the third party would submit a monitoring report that includes summaries of water quality analyses and any exceedances of water quality objectives, and summaries of the farm evaluations and nitrogen budgets, CEQA mitigation monitoring, and outreach events conducted in the previous two years.

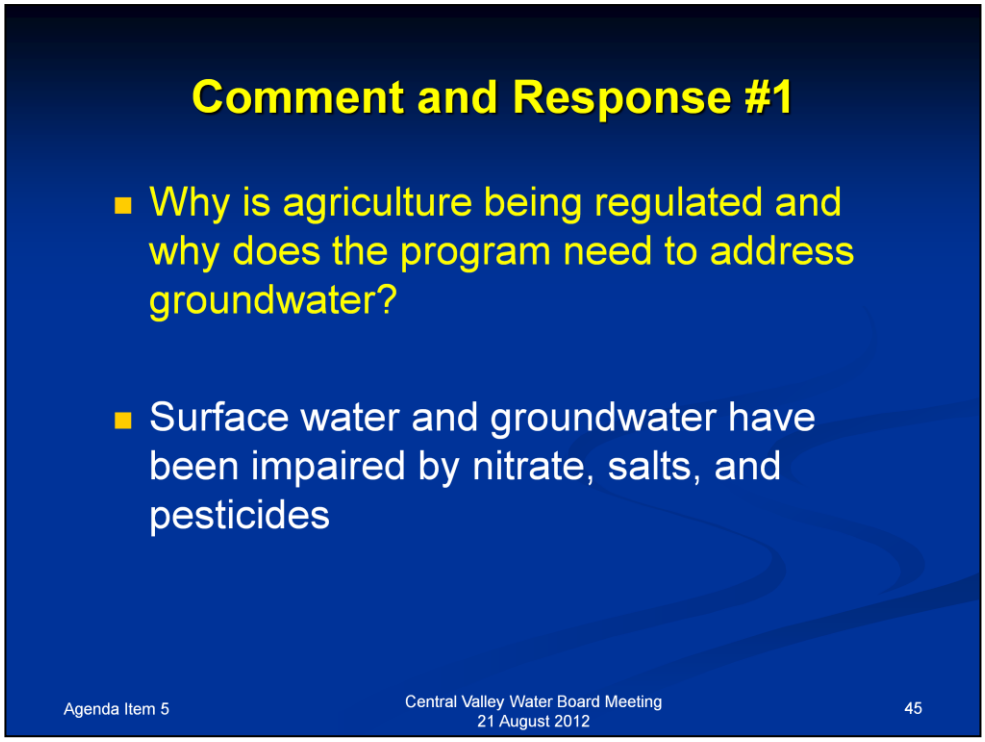
The Report would include an evaluation of the collected data, updates on management plan progress, and overall conclusions and recommendations for any needed modifications to the program.

This concludes my summaries of the draft Order and MRP and my portion of the presentation.

Unless there are questions from the Board, I will now turn the presentation over to Doug Patteson who will discuss some of the comments that we have received.



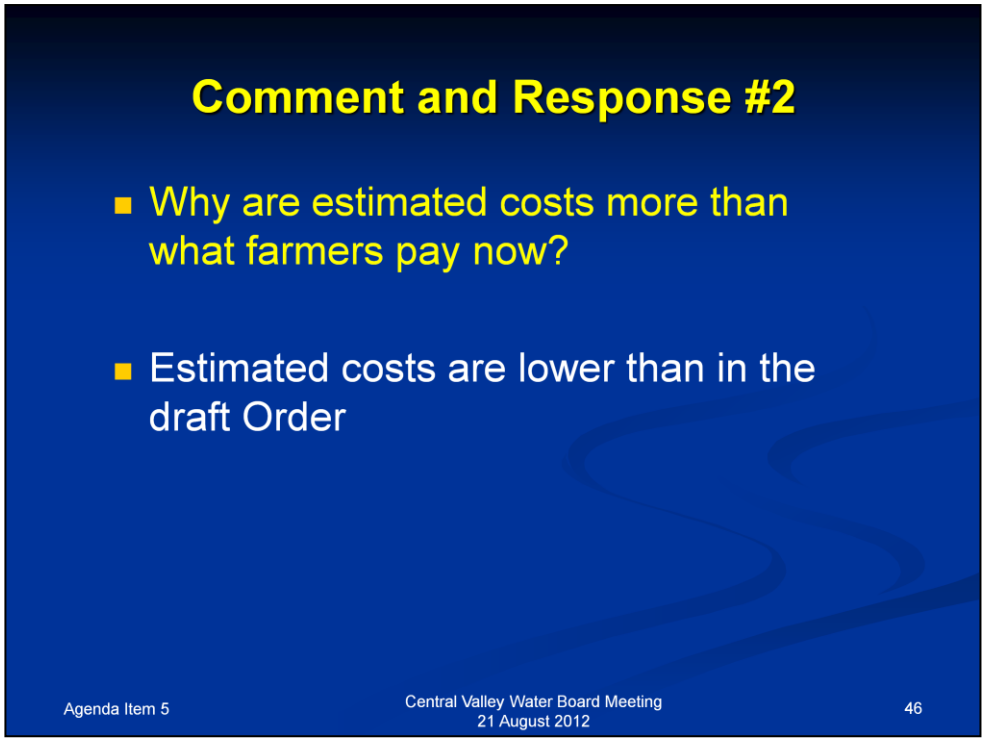
The comments received to date have been generally programmatic in nature. Changes made as a result of comments that have been submitted in writing, comments received today, and direction from the Board, will be incorporated into future revisions of the Order. I will now summarize the more significant comments we have received and staff's responses to them. Comments, in the form of questions, will be shown in yellow and bullets summarizing our responses will be shown in white.



Question: Why is agriculture being regulated and why does the program need to address groundwater?

Discharges from agricultural lands can affect water quality by transporting constituents of concern into surface water and groundwater.

Historically, the Irrigated Lands Regulatory Program has addressed only water quality issues associated with surface water. Scientific studies by the United States Geological Survey and U.C. Davis have concluded that a major source of nitrate pollution in groundwater is agricultural cropland. While irrigated agriculture is the major source of nitrate, we recognize that a variety of other potential sources exist that contribute a percentage of the nitrate in groundwater. These other sources can be locally significant and are regulated through a series of programs administered by the Central Valley Water Board.

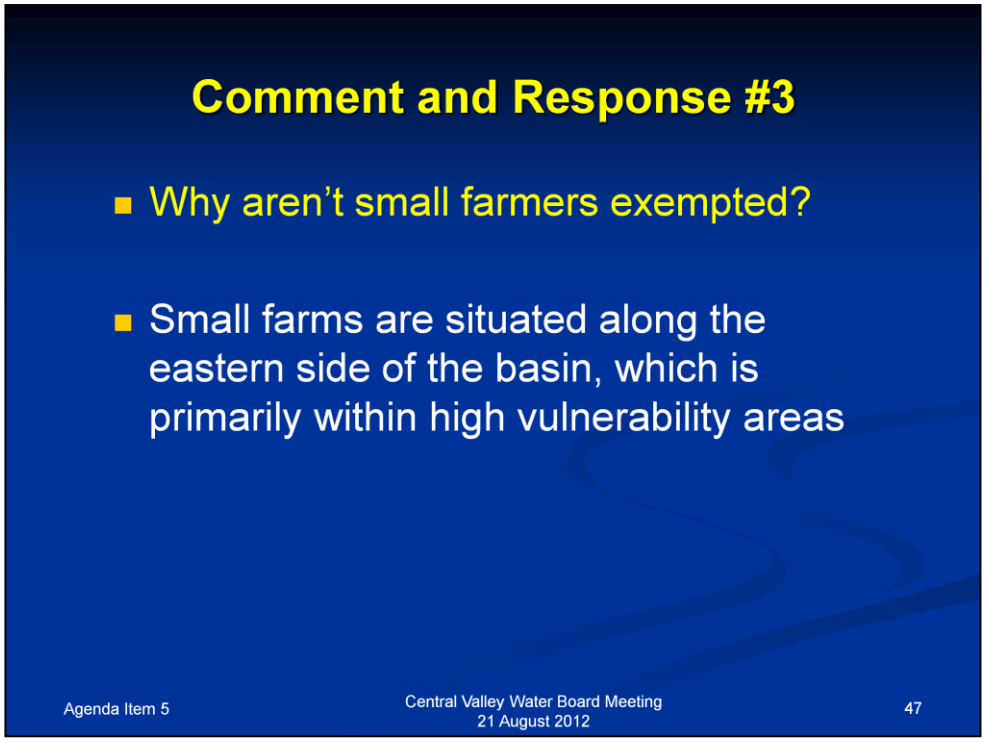


Why are estimated costs more than what farmers pay now?

We recognize that new requirements for the Irrigated Lands Regulatory Program will increase because groundwater is being brought into the program. The Board will take every reasonable step possible to minimize costs without compromising environmental compliance. The initial draft of the Order contained an estimated cost of $120 per acre per year. Further refinement of the cost calculations has led to a current estimate of $21 per acre per year. The primary reason that the estimated costs are lower is that the need for implementation of improved practices is lower in the Tulare Lake Basin. The Tulare Lake Basin has both fewer surface water quality problems to address and a greater degree of improved practices that have already been implemented. The estimate could further decrease or increase as we learn more about the Tulare Lake Basin area through our program implementation. The current program, which addresses only

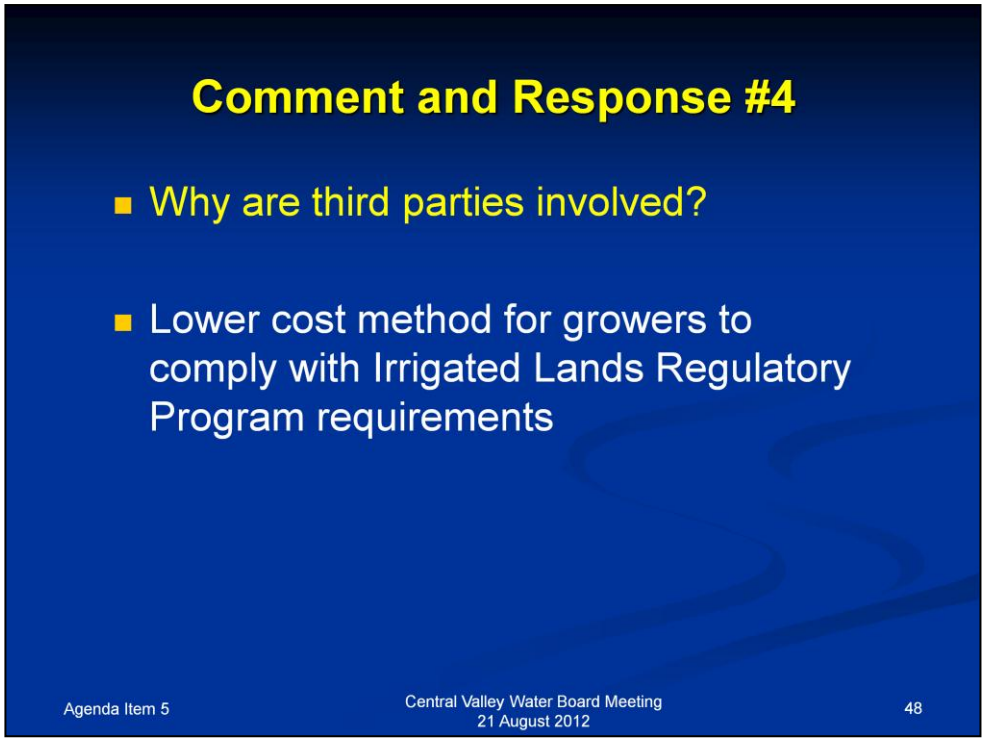
surface water, has a region-wide cost estimate of about $17 per acre, meaning that for growers covered by the Conditional Waiver that is currently in effect, there is an increased estimated cost of $4 per acre.

Of the total cost estimate, the largest component is for implementation of management practices. This is money that will be spent by farmers for improving their property, not money paid to the State or to third party groups. An example of this is the conversion from flood or furrow irrigation to drip or micro sprinklers, which has operational benefits in addition to being more protective of water quality.



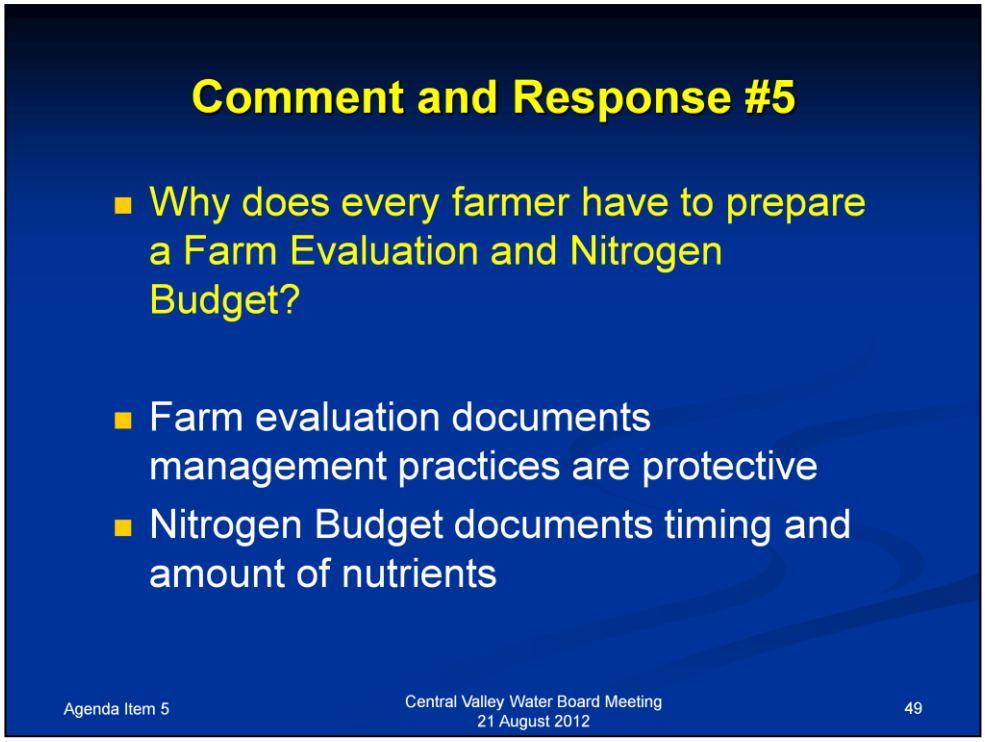
Why aren't small farmers exempted?

The majority of small farms are along the eastern edge of the basin, which is primarily within areas that staff believes will be the high vulnerability areas for impacts to groundwater from agricultural operations. This part of the Basin provides much of the water recharged to groundwater used for domestic purposes by most of the large cities and small towns in the Basin. Many of the smaller communities in this area, for example Seville and Orosi, have water quality issues related to agricultural activities. For these reasons, it is appropriate to include the small farm operations in this draft Order.



Why are third parties involved?

Growers can pool their resources to conduct the monitoring required and the third party will gather information from growers and provide it to the Central Valley Water Board. The alternative is for growers to be regulated directly by the Board and conduct farm-specific monitoring, which would be much more expensive.

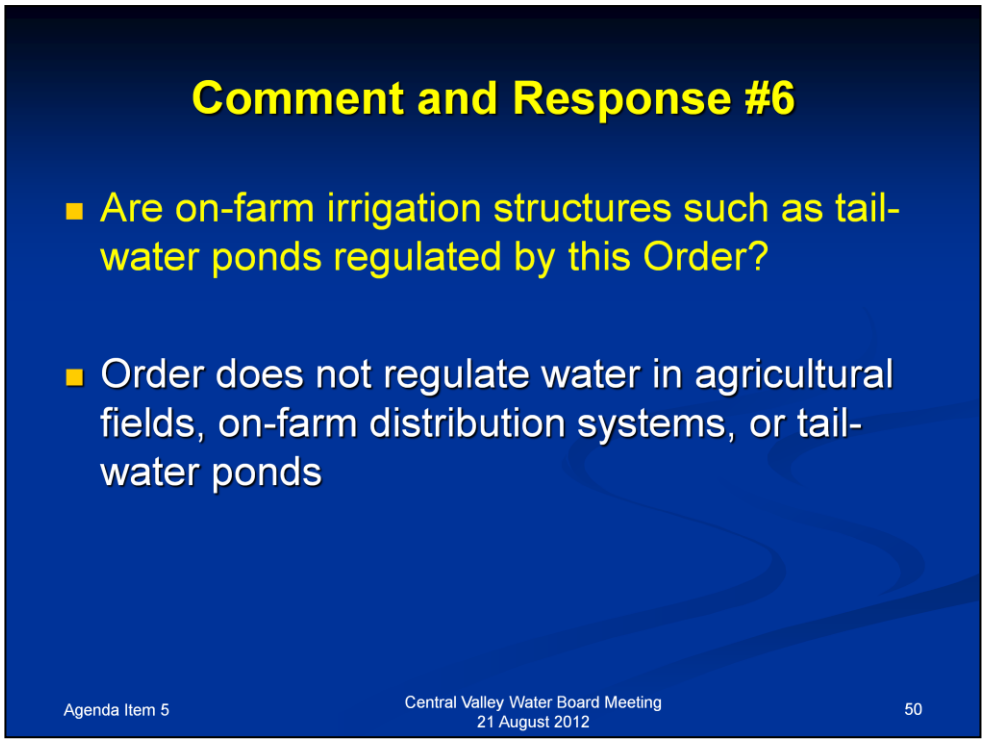


Why does every farmer have to prepare a Farm Evaluation and Nitrogen Budget?

The basis for success of the proposed regulatory program is that growers will implement farming management practices that will protect both surface and groundwater quality. The current regulatory program is in its tenth year, yet the Board has limited information regarding the farm management practices currently being implemented by growers. If a farm is already implementing protective management practices, the grower will not be required to implement additional practices and the farm evaluation template will be the method of documentation for the grower. The evaluation will also be the process through which growers needing change will document that changes have occurred or new practices have been implemented.

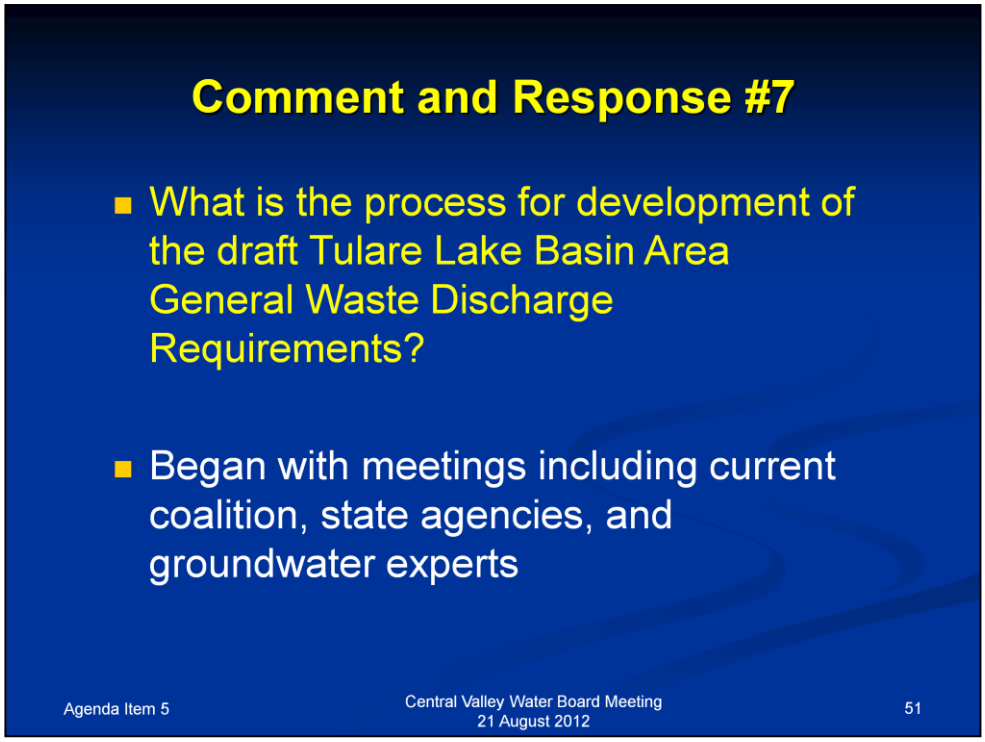
Nitrogen management is a specific type of management practice that identifies the nutrient needs (in terms of timing and amount) of a given crop in order to maximize yield and minimize nutrient runoff from fields to surface waters or infiltration into groundwater. An annual nitrogen budget worksheet will be completed by all members and submitted to the third-party, not to the Central Valley Water Board. Growers within high vulnerability areas are required to have a qualified individual certify their nitrogen budget worksheet.

High Vulnerability – SWRCB vulnerability areas, GAMA, DPH Well data, dairy well data



Are on-farm irrigation structures such as tail-water ponds regulated by this Order?

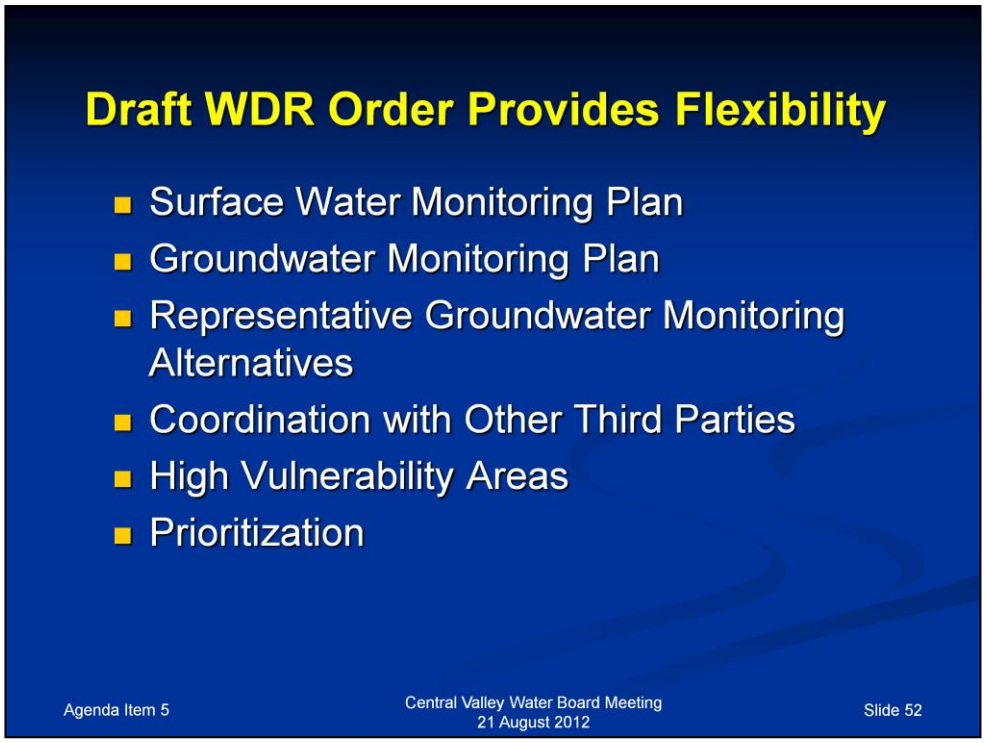
The proposed Order is not intended to regulate water as it travels through or on agricultural fields, including furrows, beds, checks, on-farm distribution systems (including tail-water ponds), and soil pore liquid above the water table.



What is the process for development of the draft Tulare Lake Basin Area General Waste Discharge Requirements?

The Central Valley Water Board is currently in the process of revising the draft Order. Comments will be noted at this Workshop and in the next few weeks as staff prepares for the next round of public review and comment. Staff anticipates having a tentative Order ready for public review in October of this year. Following receipt and review of comments during that public comment period, staff will prepare a tentative order that is currently scheduled to be considered by the Board at its first meeting in 2013. Staff will continue to work with agriculture, other interested parties, and other state agencies as we proceed with drafting the proposed requirements.

I will now hand the presentation over to Clay Rodgers for some concluding statements.



Chairman Longley and members of the Board, I am Clay Rodgers an Assistant Executive Officer in your Fresno Office. I will provide just a few summary comments. A complaint staff has heard regarding the draft order is that the document does not provide flexibility. There is flexibility in the order, although some people may not recognize it as such.

The flexibility includes the preparation of monitoring plans for surface and groundwater that are to be prepared by the coalition. This allows preparation of monitoring programs based on the characteristics of the Tulare Lake Basin Area.

The order also allows the coalition to propose alternatives to conducting only groundwater monitoring in the groundwater representative monitoring plan. Another option of groundwater monitoring included in the draft order is the concept that since the questions to be answered by groundwater monitoring are

the same, that the coalitions can cooperate to answer the questions once for the region rather than each coalition answering them separately.

The coalitions also will be involved in identifying the high vulnerability areas by way of their preparation of the Groundwater Assessment Report.

And finally, the order allows the coalition to propose a prioritization scheme to orderly implement the requirements understanding that the entire program cannot be implemented immediately.

On this last slide, I would like to reiterate a couple of significant comments we have received regarding the draft order. The first comment is why is the Regional Board changing the program? The program is being changed because groundwater provides a significant portion of our water supply and the responsibility of this agency is to protect the beneficial uses. Scientific studies have identified that significant impacts to groundwater quality due to agricultural activities have occurred in the Central Valley. These impacts have affected the ability to use the groundwater for all of its beneficial uses in some parts of the Tulare Lake Basin Area. It has been recognized that agriculture has made significant improvements in the past few decades and we are confident that many of these improvements are protective of surface and groundwater quality. Unfortunately, not all farmers are implementing best management practices. This program provides a method to identify practices that work and ensure they are being implemented.

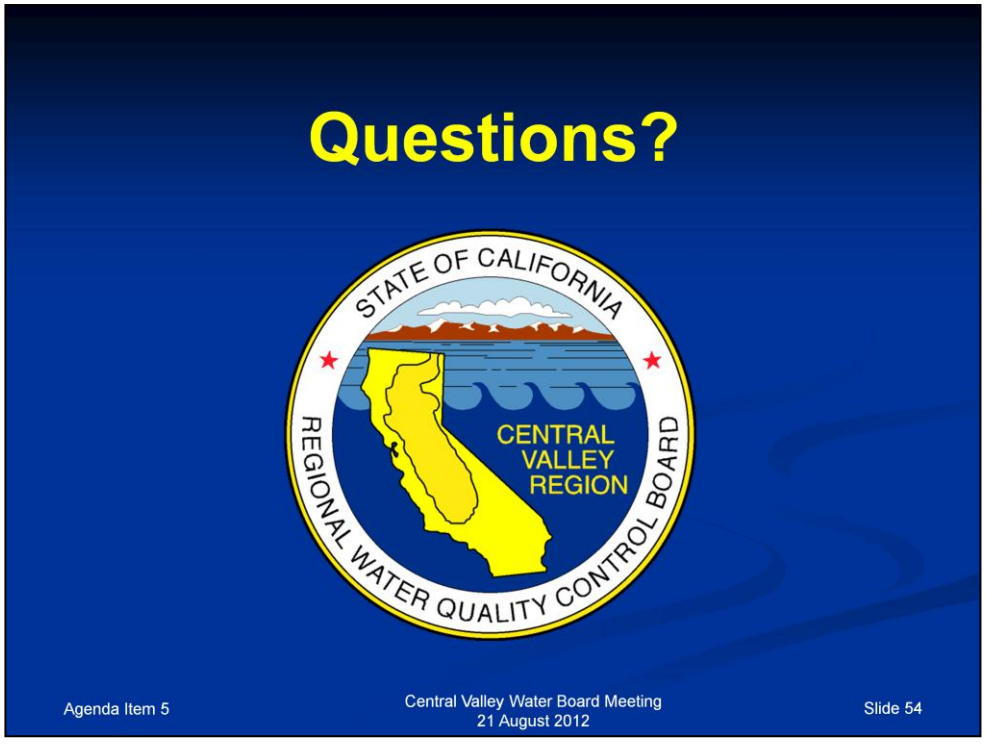
There has been a lot of concern regarding the $120/acre cost estimate that was in the Information Sheet associated with the draft order. This cost estimate has been revised. Upon further analysis, the estimated cost to implement the order in the Tulare Lake Basin Area is $21/acre. The estimated cost to implement the existing conditional waiver is approximately $17/acre for an increase of about $4/acre for those farmers currently enrolled in the program. The majority of these costs, for both the current and proposed programs, are associated with management practice improvements. Staff is working with the industry and other State Agencies to find ways to minimize the cost, but still fulfill our regulatory obligations.

We have been criticized that the draft order we are talking about today is similar to the East San Joaquin Order. The reason there are a lot of similarities with other coalition orders is because there is a regulatory structure of how we are approaching the orders throughout the region. This includes similarities in identification of highly vulnerable areas, preparation of documents like Farm Evaluations, nutrient budgets, sediment and erosion control plans, and Monitoring Plans. However, there are significant differences including how surface water is addressed in the Tulare Lake Basin draft Order and the flexibility discussed on the previous slide.

There have been complaints regarding non-involvement of industry in preparation of this draft order. We have had numerous meetings with industry representatives regarding this order with a wide range of individuals involved. Staff has attended many meetings with groups wanting to know about this order and other State Agencies including CDFA and DPR. To my knowledge staff has met with every person wanting to meet and returned every phone call.

I will end with the next steps. Staff is taking the written comments we have received, comments and Board direction received during this

meeting, and to the extent possible new comments to prepare a tentative order scheduled to go out for public review in October. Following receipt of comments staff will prepare an order currently scheduled for Board consideration in early 2013.



This concludes my part of the presentation and the team is available to answer questions.